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The exposure of Australian agriculture to risks from China:

the cases of barley and beef

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Introduction

The barley and beef industries are in the spotlight as test cases on where the lucrative but turbulent Sino-Australian bilateral economic relationship is heading and how stakeholders can respond. In mid-May 2020, China imposed a prohibitive tariff of 80.5% on Australian barley citing claims of dumping. It also suspended imports from four Australian abattoirs, citing problems with labelling and certificates. The cases date back to 2018 and 2019 respectively but the timing of the sanctions has been widely interpreted as retaliation to Australia's initiation of an inquiry into COVID-19. China has denied accusations of economic coercion. With nothing to be gained from escalating the situation, Australian government and industry bodies are focusing on the technical issues at hand. The technical details of the cases are incomplete, but have generated a wave of popular commentary and speculation.

This paper provides a detailed examination of the barriers that China has imposed on Australian beef and barley as cases to address broader questions about the benefits, costs and risks of Australia's economic relationship with China. It explores several questions: Why did China apply these specific trade barriers to these specific commodities on the timeline that it did? What are the impacts and mitigation strategies for the affected industries? And, how should Australian industry stakeholders – and indeed the public – respond to the cases or their escalation?

China accounted for 25% of Australian beef exports in 2018 worth AU$1.3 billion and 60% of Australian barley exports worth AU$1.4 billion. While such macro statistics provide a starting point for analysis, they cannot answer questions on the causes and effects of the cases, let alone formulate a cohesive strategy on how to approach trade policy with China. More detailed analysis is required. Crucially, any useful analysis must draw on a detailed understanding policy and markets in China, and of industry structures and dynamics.

This paper argues that the specific trade barriers applied to barley and beef are a product of a deeper set of Chinese domestic strategic imperatives and take into account medium- and short-term market factors that minimise costs or maximise benefits to China. The impacts and mitigation strategies for affected Australian industries are forged by a complex mix of seasonal conditions and substitute markets and products, often at a sub-commodity level (i.e. types of beef and barley). The preliminary analysis in the paper suggests that the impacts on Australian industry is only a fraction of that implied by the macro data and can be mitigated through multiple strategies.

However, there are strong indications are that such cases will continue and escalate. This is a function of deep-rooted forces and shocks generated by the political economy and politicised trade policy of Chinese agriculture, in an era of challenges to international rules-based trade in agriculture,

including by China. Government and industry agencies require a more cohesive and rigorous approach to these risks.

The paper makes five recommendations: a) that the Australian government take the Chinese anti-dumping case on barley to dispute resolution at the WTO; b) that Australian government and industry agencies invest more in market and policy intelligence in China, together with other major agricultural exporting countries; c) that Australian government and industry agencies invest more in developing market access protocols and industry-to-industry links in alternative agricultural markets: d) that Australian farmers and companies incorporate ex-ante the risks of exporting to China in market, product and management decisions: e) that Australian cattle producers and abattoirs exposed to the high value segment of the Chinese market incorporate the risks of holdup and the costs of watertight compliance to administrative rules into sales to Chinese importers.

Chinese agricultural policy

The roots of Chinese agricultural trade policy stems from two domestic imperatives: rural incomes and food security.[2] In a feat of historic proportions, China is on the brink of eradicating poverty and rural incomes have increased by a factor of 12 over the post-1978 reform era China. However, civil unrest derives not from absolute income levels, but relative income levels. Rural incomes are 2.5 times lower than urban incomes, which makes China amongst the most unequal countries in the world.[3]

With a modern history of revolution, war and famine, the Chinese Communist Party (CCP) is understandably concerned with self-sufficiency in staple foods. With limits on land, water, labour and gains from fertiliser, there have been many alarms on food insecurity, most famously in Lester Brown's "Who will feed China".[4] However China is 90-95% self-sufficient in the key grains of rice, wheat and corn and consensus is building amongst Chinese forecasters that this is sustainable into the long term.[5] Self-sufficiency levels are around 80% for many other agricultural products (feed and brewing grains, milk, sugar, beef).

However, food security is not just a function of dependency levels, but of price and access by the broader population for a basket of foods. Price inflation due to shocks can break countries as seen in the international food price spikes and the Arab Spring of 2008/9. China is incessant about diversification in food imports, which is reflected in domestic and trade policy and overseas agricultural investments. This is reflected in policy documents and statements at the highest levels of the State, [6] and enacted through a vast State system down to township level.[7]

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[2] Han, J (2014), Zhongguo liangshi anquan yu nongye zouchuqu zhanlve yanjiu (Research on China's food security and agricultural going out strategy), Zhongguo Fazhan Chubanshe (China Development Press), Beijing; Huang, JK and Yang, GL. (2017), Understanding recent challenges and new food policy in China, *Global Food Security*, 12:119–26. doi.org/10.1016/j.gfs.2016.10.002.

[3] Jain-Chandra, S., Khor, N., Mano, R., Schauer, J., Wingender, P., Zhauang, J. (2018) Inequality in China – Trends, Drivers and Policy Remedies, *IMF Working Papers*, International Monetary Fund, Working Paper No. 18/127. Available at https://www.imf.org/en/Publications/WP/Issues/2018/06/05/Inequality-in-China-Trends-Drivers-and-Policy-Remedies-45878

[4] Brown, L. R. (1995) *Who Will Feed China: A Wake-Up Call for a Small Planet*, New York, W.W. Norton & Company. Available at https://archive.org/details/Who-Will-Feed-China

[5] Cui, K., & Shoemaker, P. (2018) A look at food security in China, *npj Science of Food*, 2(4). https://doi.org/10.1038/s41538-018-0012-x Available at https://www.nature.com/articles/s41538-018-0012-x

[6] No. 1 Document of the State Council and the Ministry of Agriculture and Rural Affairs of 2019 is the central over-riding policy document for agricultural and rural affairs. It states that China will take the initiative to open channels to imported products in short supply, diversify import channels, build international cooperation with One Belt One Road countries, increase efforts to control the smuggling of agricultural products, increase support for agricultural companies "going out" to invest abroad and nurture a group of multinational agricultural conglomerates. http://www.moa.gov.cn/ztzl/jj2019zyyhwj/2019zyyhwj/ . See also Guowuyuan xinwen bangongshe (State Council News Office) (2019) Zhongguo de liangshi anquan (China's Food Security). Zhongguo zhengfuwang (Website of the government of China) http://www.gov.cn/zhengce/2019-10/14/content_5439410.htm; Anonymous (2019) Woguo zhulao liangshi anquan pingzhang (My country builds a barrier for food security). Zhongguo zhengfuwang (Website of the government of China) http://www.gov.cn/xinwen/2019-01/18/content_5358853.htm.

[7] Agriculture is the third largest arm of the Chinese State (after health and education) with four million public staff in administrative and service units. The latter include agricultural education and research, information and standards, monitoring and inspection, demonstration and especially agricultural extension. Waldron, S., Brown, C., & Longworth, J. (2006) State sector reform and agriculture in China, *The China Quarterly*, No. 186 June, pp.277-294. https://www.jstor.org/stable/20192613

To increase rural incomes and food security, in the 2000s China turned attention to the "three rurals" (farmers, agriculture and rural areas). Reversing a history of agricultural extraction, industry is now expected to support agriculture.[8] This follows the course of other countries in the process of rapid economic development and industrialisation. However, Chinese agricultural subsidies were US$212 billion in 2017 (2.04% of GDP) double those of the EU and six times that the US ($33 billion, 0.47% of GDP). Chinese subsidies have been high and volatile since the 2000s, compared to those in the EU and US which are steadily declining. Australian agriculture is the least subsidised country in the OECD (1.3 billion, 0.17% of GDP).[9] (Figure 1).

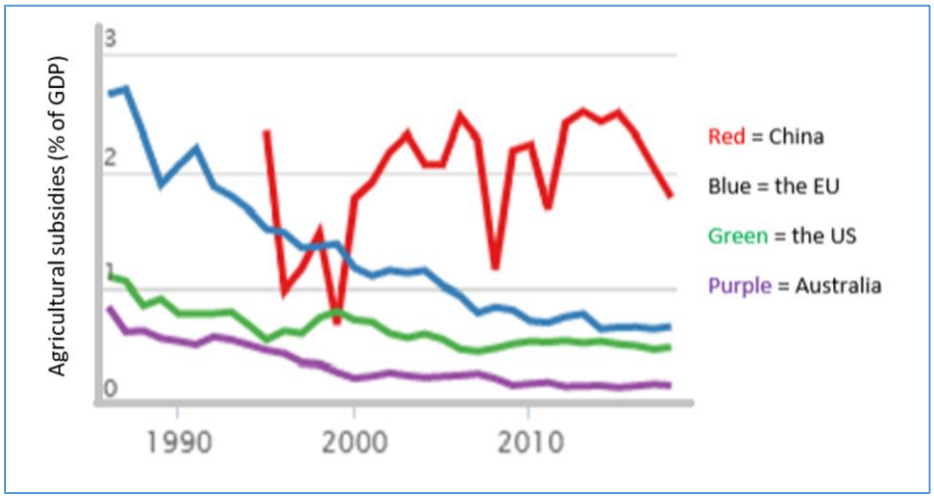

Figure 1: Total support to the farm sector in China, the EU, the US and Australia.

Source: OECD[10]

[8] This is known as gonye fanbu nongye (工业反哺农业). The term makes reference to the idiom of a crow that grows up and which must feed or look after its parents as a show of obligation and gratitude (wuya fanbu 乌鸦反哺)

[9] OECD (2017) *Agricultural Policy Monitoring and Evaluation 2017*, OECD Publishing, Paris https://doi.org/10.1787/agr_pol-2017-en. https://www.oecd-ilibrary.org/agriculture-and-food/agricultural-policy-monitoring-and-evaluation-2017_agr_pol-2017-en

[10] Total support to the farm sector includes support to individual farmers, support to the sector collectively and consumer subsidies. OECD (nd.) Agricultural policy monitoring and evaluation: Getting the agricultural policy mix right. http://www.oecd.org/agriculture/topics/agricultural-policy-monitoring-and-evaluation/ Accessed May 20, 2020.

Corn and barley

Shaken by the international food price crisis of 2008 and convinced that the world had entered into a new era of food shortages and inflation, China embarked on a major grain security program in the 2010s. The vast majority of agricultural subsidies were used for price support (floor and above-market prices) and production subsidies (machinery, seed and other inputs). Corn was a major target of the subsidies, which is used as starch in food and for livestock feed especially pigs and chickens.

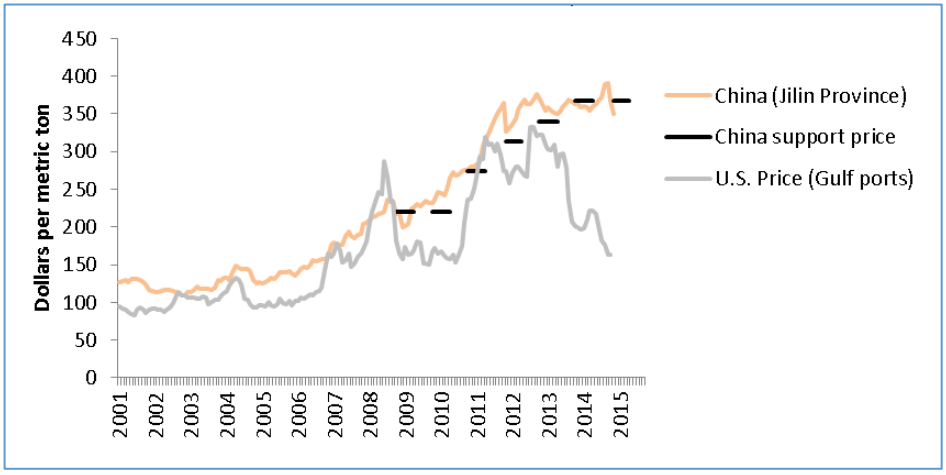

Figure 2: China and US corn prices (2001-15).

Source: Dim Sums[11].

China was also particularly concerned with an over-reliance on the US for corn and established a diversification strategy based on import quotas along with subsidies for domestic production. Farmers were subsidised to increase areas planted to corn (by 40% between 2010 and 2015), with production increasing by 60% over the period.[12] This culminated in a harvest of 220 million tonnes in 2015 – higher than the perennial number one crop of rice. The surplus was stockpiled, reportedly at a massive volume of up to 250 million tonnes[13], which made up half the worlds' corn reserves. This had to be released gradually (over five years) to minimise the massive losses to the State from purchases at above market and international prices.

Corn prices in China were therefore artificially high and well above international prices for at least five years (Figure 2). This did not lead to high corn imports as these were protected by tariff rate quotas (of 7-10 million tonnes per year). It did however lead to very large imports of corn substitutes

[11] Anon, (2014) China's corn price support problem, *Dim Sums*, November 29. Available at http://dimsums.blogspot.com/2014/11/chinas-corn-price-support-problem.html

[12] FAO STAT (nd.) *Food and Agriculture Data*, Food and Agriculture Organization of the United Nations. Available at http://www.fao.org/faostat/en/ . Accessed May 21, 2020

[13] Anonymous (2016) 2016 nian zhongguo yumi chanliang, kucun, xiaofeiliang ji jiage zoushi fenxi (Analysis of China's corn production, storage, consumption and price trends in 2016), Zhongguo chanye xinxiwang (China Industry information Net) https://www.chyxx.com/industry/201609/451398.html

not protected by tariffs over the 2010s including distillers' grains (from the US), sorghum and – most importantly here – barley (Figure 3).[14]

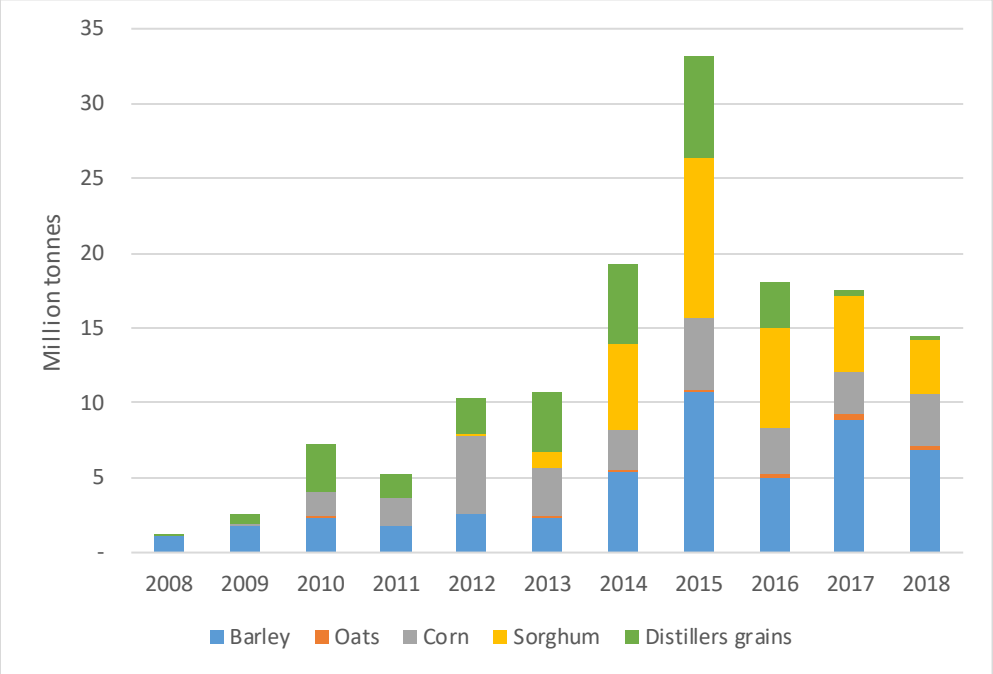

Figure 3: China imports of corn substitutes (2008-2018).

Source: UNComtrade, accessed May 2020.

Australia accounted for an average of 65% of China's barley imports over the period 2014-18 and 100% of the oats. Australia also accounted for the majority of the sorghum (70%) until 2013 when the US took over. The US accounts for all the distillers waste, despite China's anti-dumping threats. The US held 90% of China corn imports in 2013, which reduced dramatically to 40% in 2014, then reduced further to 9% in 2018.[15] The result is widely heralded as a successful strategy of increased diversification and security.[16] There are parallels with policy toward Australian barley, as discussed below.

China's corn subsidy program had wide-ranging impacts. In China it led to the "three highs" – of high prices, high storage, high (substitute) imports and increased feed prices for the Chinese pig and poultry industries. To meet grain targets, technical extension systems and farmers over-applied

[14] In addition, China imported USD3-4 billion of "feed and residues" per year from 2010 (soybean meal/cake from the US and fishmeal from Peru) (UNComtrade, accessed May 2020).

[15] Xi, YS and Xu, WP (2015) Zhongguo yumi shichang zhanwang 2015-24 (Outlook on the Chinese corn market, 2015-24). 2015 Zhongguo nongye zhanwang dahui (2015 China Agricultural Outlook Conference). Beijing April 20-21, 2015. Available at https://aocm.agri-outlook.cn/2015/baogao/guwu3.pdf

[16] Yang Yantao (ed) (2017) Zhongguo yumi xuqiu maoyi zhengce (China's corn supply, demand, trade and policy) Zhongguo caijing jingji chubanshe (China Finance, Politics and Economics Publishing House), Beijing.

fertiliser. There were also widespread international impacts in developing countries.[17] In 2016, the US also opened an investigation (joined on a panel of 26 others countries) into Chinese domestic support of producers for corn, wheat, Indica rice and Japonica rice from 2012-15.[18]

By 2015, the corn subsidy program had collapsed under its' own weight.[19] Reforms to grain policy varied by crop,[20] but for corn there was a reduction in direct support linked to output (price and storage) and an increase in other measures (income support, credit, insurance) in major corn production provinces.[21] However the subsidy program had left China with the stockpile, which it worked through by conducting auctions, expanding its ethanol program and in some cases selling at a loss on international markets (including Central Asia). The rundown of the stockpile was delayed by African swine fever (ASF) in 2018/9 but is now reported to be at a manageable 50 million tonnes.

The Australia-China barley trade

Australia has had a strong trading relationship with China for barley since 1992 (including an export of one million tonnes in 1994) but became very strong in the 2010s. Australian barley exports peaked in 2017 at 6.5 million tonnes, worth US$1.3 billion. (Figures 4 and 5). The trade was also strong in 2018 but declined significantly in 2019 (2.5 million tonnes in 2018-19) due to a low harvest and reduced demand for beer and feed (due to ASF, see below).[22]

[17] For example, high Chinese corn prices had flow-on effects for cassava, used as a substitute in Chinese alcohol (*baijiu*) production. Small-holder farmers in Cambodia responded with a massive increase in cassava planting from 2010-16, which led to increased land inequality and land acquisitions over a very short period. There were further dislocations when prices corrected later in the latter half of the decade.

Cramb, R. & Newby J. (2016) Cassava farmers in Southeast Asia exposed to policy change in global carbohydrate market, ACIAR Available at http://aciarblog.blogspot.com/2016/04/cassava-farmers-in-southeast-asia.html . Kem, S. (2017) Commercialisation of Smallholder Agriculture in Cambodia: Impact of the Cassava Boom on Rural Livelihoods and Agrarian Change. PhD thesis, The University of Queensland.

[18] WTO (nd.) *DS511: China Domestic Support for Agricultural Producers*, World Trade Organization. Available at https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds511_e.htm

[19] There were parallels for price support for soybeans, cotton and canola in 2013-15.

[20] Hejazi, M and Marchant, M (2017) China's Evolving Agricultural Support Policies, Choices, 2nd Quarter 2017, 32(2).

http://www.choicesmagazine.org/UserFiles/file/cmsarticle_580.pdf

[21] Huang, JK. and Yang, GL. (2017), Understanding recent challenges and new food policy in China, *Global Food Security* 12: 119–26. doi.org/10.1016/j.gfs.2016.10.002. and USDA

[22] ABARES (nd.) *Agricultural commodities and trade data*, Department of Agriculture Water and the Environment, The Australian Government. Available at https://www.agriculture.gov.au/abares/research-topics/agricultural-commodities/agricultural-commodities-trade-data#australian-crop-report-data . Accessed May 22, 2020.

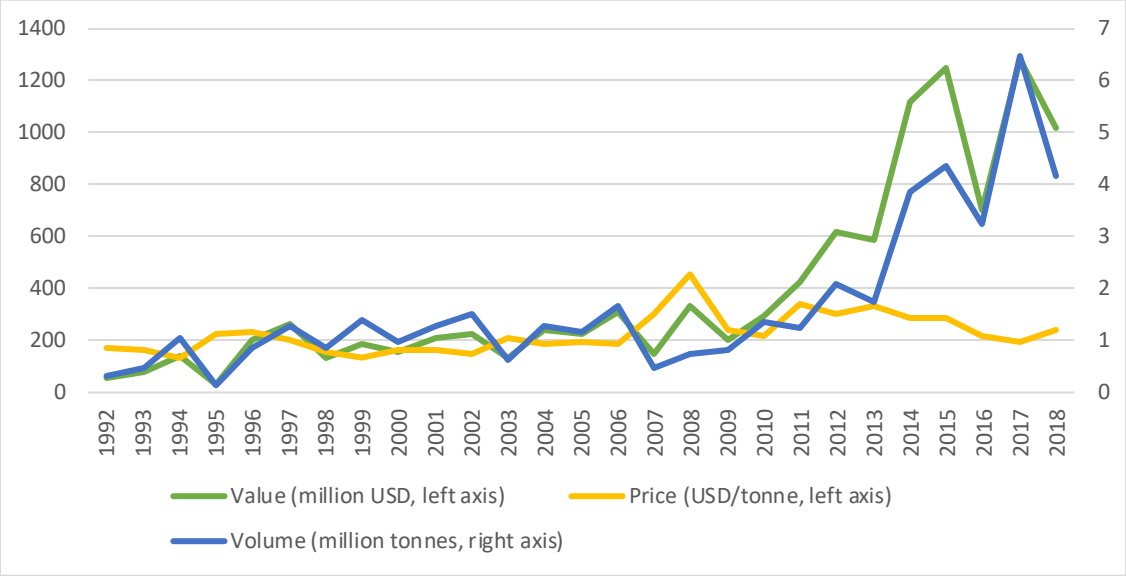

Figure 4: Volume, value and average price of Australian barley exports to China (1992-2018).

Source: UNComtrade, accessed May 26, 2020.

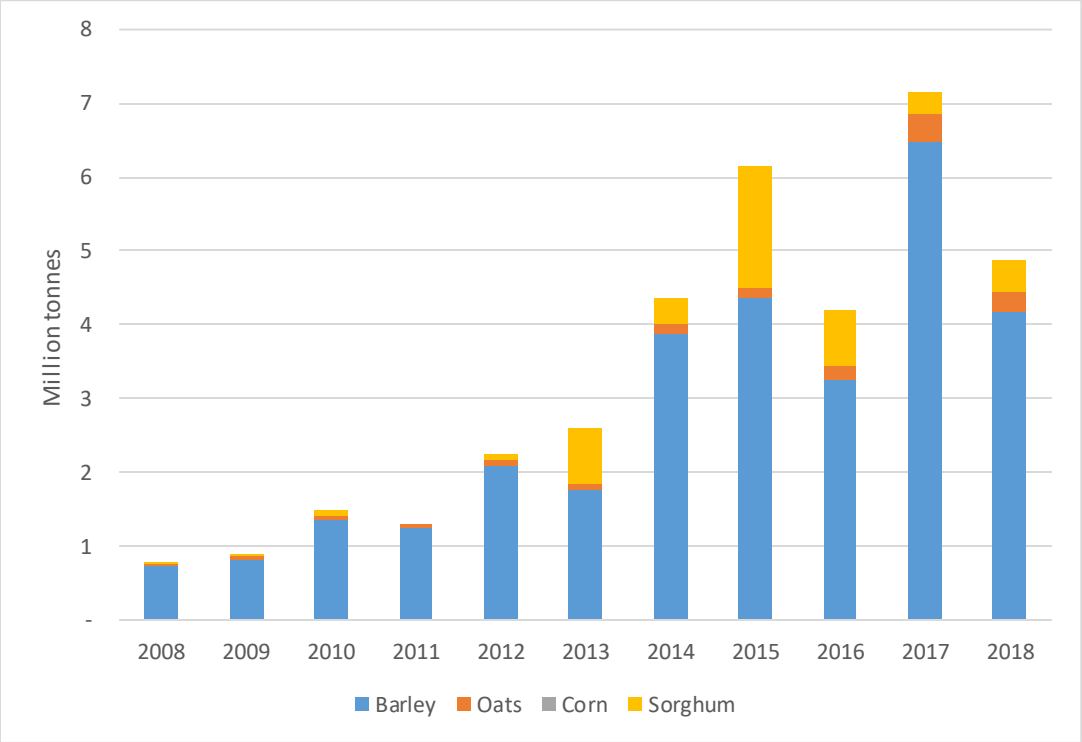

Figure 5: Australian feed/malting grain exports to China and proportion of Australia in Chinese barley imports (2008-18).

Source: UNComtrade, accessed May 26, 2020.

There are important differences in barley varieties, production, end uses and markets. Australian exports to China are widely thought to be for "high quality" malting barley for brewing. However, as illustrated by the substitution with corn (above) and price levels and statements form industry,[23] a significant proportion of Australian barley is used for livestock feed, including pigs and poultry. There is also substitution between feed and malting barley. Figure 6 provides a breakdown of the overall barley market in China.

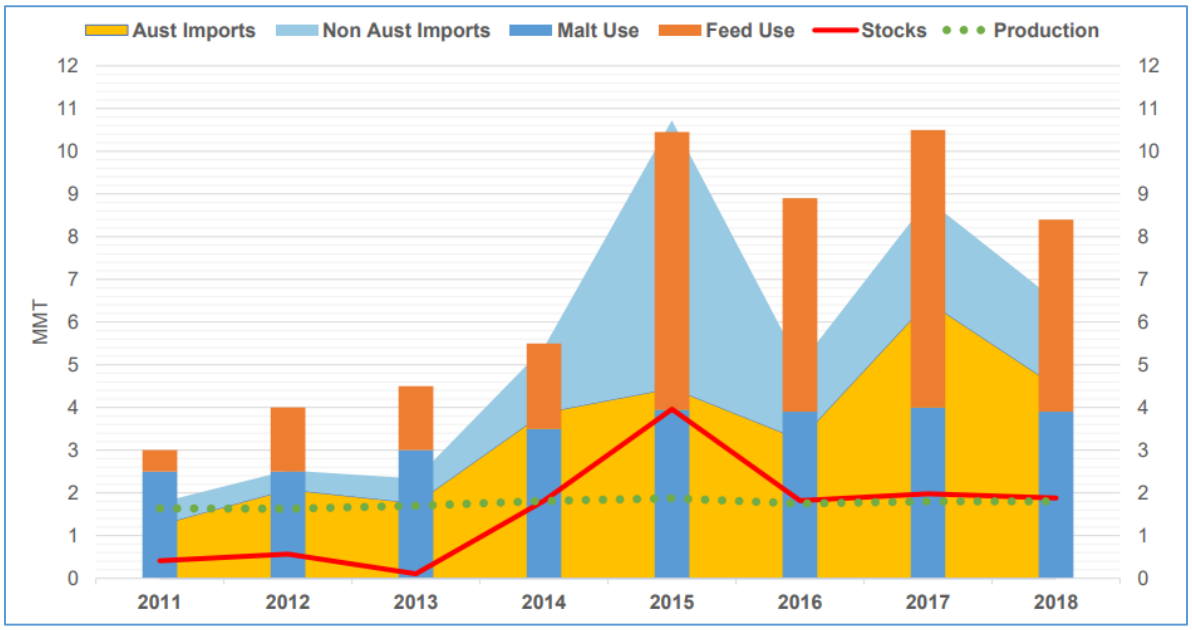

Figure 6: Imports and uses of barley (2011-18).

Source: CHINA NGOIC & COFCO International Research[24]

China's anti-dumping case

The China Chamber of International Commerce (CCIC) initiated an investigation into the dumping of Australian barley in October 2018 and the Ministry of Commerce (MOFCOM) ruled on the case in May 2020 and applied a tariff of 80.5% (73.6% anti-dumping, 6.9% anti-subsidy). China was also investigating a sorghum anti-dumping cases against Australia and the US but this was later dropped.[25] The period of the barley dumping claim extends from October 2017 to September 2018.

[23] According to a major grain trader, Western Australia – by far the largest barley exporter to China – sells 80% of its malting barley to Chinese brewers and 70% of its feed barley to the livestock sector. GBH Group submission to the APH commission on Diversifying Australia's Trade and Investment Profile. https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Joint_Standing_Committee_on_Trade_and_Investment_Growth/DiversifyingTrade/Submissions

[24] Li, Y. (2018) *China Feeding 1.4 Billion People: Investing in the Good Chain*, COFCO International Australia, 2018 GIWA Forum. Available at www.giwa.org.au/_literature_244580/GIWA_Forum_2018_3_October_2018_COFCO_Keynote_Presentation

[25] Gu, H. & Polansek, T. (2018) China retreat from U.S. sorghum probe amid global market havoc *Business News, Reuters,* May 18. Available at https://www.reuters.com/article/us-usa-trade-china-sorghum/china-retreats-from-u-s-sorghum-probe-amid-global-market-havoc-idUSKCN1IJ06Y

Several official documents on the case have been released, including supplementary materials used in the investigation[26] and a final report on the ruling.[27]

China claims that Australian barley was sold into China at below cost. The initial investigation was based on calculations from various databases and calculators for prices, freight costs and cost of business, tariffs (3%) and VAT (13%) exchange rates. These were reconciled with the average value of imported Australian barley reported in China Customs data. The investigation also cites material from the Australian Exports Grain Innovation Centre. Chinese media cites the trade volumes and price levels over the period (2014-18) as further evidence of dumping.[28] Further data from Australian industry and international databases were sought during the investigation.

Drawing on statistics from 2014 to 2018, China claims that the dumping damaged the domestic barley industry. Over the period, there were declines in land area planted to barley, production, price and profit. The losses that farmers incurred from barley production increased from Rmb-180 per mu (one-fifteenth of a Ha) in 2014 to Rmb-284 in 2018. In addition, barley is grown in "backward" (*luohou*) semi-pastoral, dry areas including Gansu, Inner Mongolia, Sichuan, Yunnan (Figure 7) as well as Qinghai and Xinjiang.[29] [30] [31]

[26] Zhonghua renmin gongheguo shangwubu (PRC Ministry of Commerce) (2018) Zhonghua renmin gongheguo damai chanye fanqingxiao diaocha shenqingshu: fujian (PRC Investigation Application on Anti-dumping in the Barley Industry: attachments), October 9, 2018. http://images.mofcom.gov.cn/trb/201811/20181119081757833.pdf

[27] Zhonghua renmin gongheguo shangwubu (Mininstry of Commerce) (2020) Zhonghua renmin gongheguo shangwubu guanyu yuanchan yu aodaliya de jinkou damai fanqingxiao diaocha de zuicaiding (Final decision of the Ministry of Commerce of the PRC on the anti-dumping investigation of imported Australian barley). http://images.mofcom.gov.cn/trb/202005/20200518192204750.pdf

[28] The Global Times reports that "On the Chinese side, there is ample evidence to show its decisions on beef and barley imports were made on the basis of facts. According to Chinese statistics, Australia's barley imports to China increased by 67.14 percent from 3.87 million tons in 2014 to 6.48 million tons in 2017, with the import price down more than 31 percent from $288.72 per ton to $198.05 per ton" Anon, (2020) China won't fire first shot in trade war with Australia, *Global Times*, 20 May. Available at https://www.globaltimes.cn/content/1188990.shtml

[29] Zhonghua renmin gongheguo shangwubu (PRC Ministry of Commerce) (2018) Zhonghua renmin gongheguo damai chanye fanqingxiao diaocha shenqingshu: fujian (PRC Investigation Application on Anti-dumping in the Barley Industry: attachments), October 9, 2018. http://images.mofcom.gov.cn/trb/201811/20181119081758102.pdf

[30] Anonymous (2020) Zhongguo guoji shanghui: guonei damai chanye zaoshou aodaliya qingxiao de yanzhong sunhai (China International Chamber of Commerce: The domestic barley industry suffers serious losses from Australian dumping), 21shiji jingji baodao (21st Century Economic Report), May 28, 2020. http://www.agri.cn/V20/ZX/sjny/202005/t20200528_7406087.htm

[31] USDA (2019) Peoples Republic of China: Grain and Feed Annual, Grain prices reflect political risks – outweighing animal disease impacts, *USDA Foreign Agricultural Service Global Agricultural Information Network Grain Report, No. CH19022*, April 19. Available at https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=Grain%20and%20Feed%20Annual_Beijing_China%20-%20Peoples%20Republic%20of_4-17-2019.pdf

Figure 7. Major barley production provinces of China (2015)

Source: USDA[32]

Analysis on the anti-dumping claims

The claims and ruling made by the MOFCOM appear spurious. There are several untested assumptions in the data used to claim dumping (e.g. relative prices, freight and other costs) and data provided in Australian submissions was dismissed. China also drew on relative prices between Australian export prices to China and Egypt as evidence of dumping, even though Egypt ranked 23 out of 27 export destinations for Australian wheat in 2018. Prices for China (the largest market) are only 5% lower than the second largest market (Japan) and 7% below averages for all markets, not 73.6% implied in the anti-dumping tariff (UNComtrade, May 2020). The lower prices to China may reflect a range of factors, including the type of barley (feed vs malting), grade and volumes.

There is also an absence of causality between the alleged dumping and the decline in Chinese barley production. Figure 8 shows that Chinese domestic barley production and planted area has declined

[32] USDA (2017) Wheat and Rice Supplants Corn Area, GAIN Report Number CH17017. United States Department of Agriculture Foreign Agricultural Service. April 4, 2017. https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=Grain%20and%20Feed%20Annual_Beijing_China%20-%20Peoples%20Republic%20of_4-4-2017.pdf

since 1992. There was decline in planted area from 2011-15 but production increased due to higher yields. Production declined from 2015 to 2017, with a slight uptick in 2018.

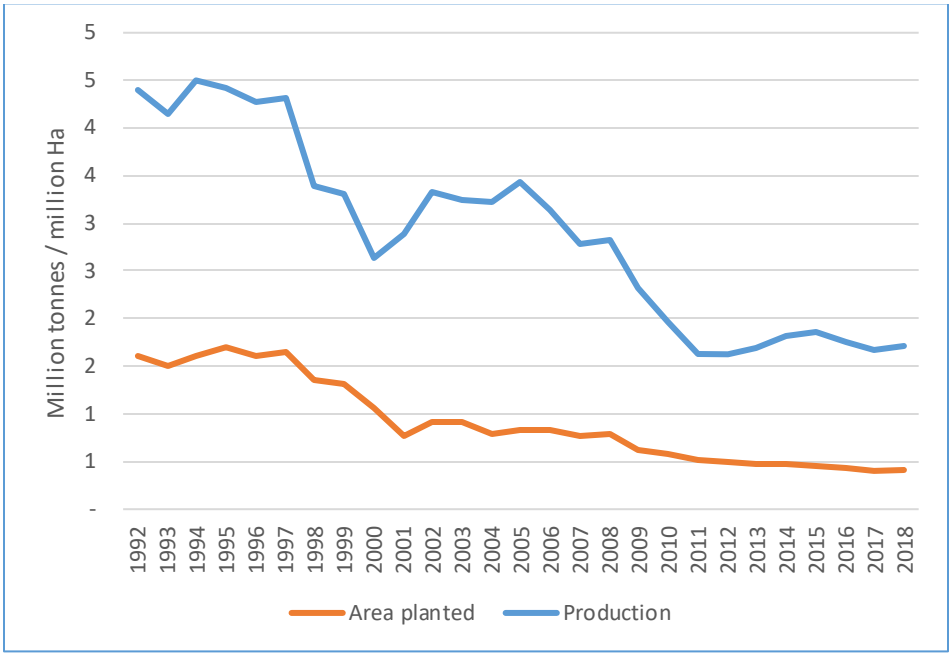

Figure 8. China barley production and planted area (1992-18)

Source: FAOStat (1992-2013), MOF (2014-2018)

Even though China alleges Australian dumping from 2017 to 2018, it chose the period 2014-18 to argue damage to the domestic industry. This period may have been selected to coincide with the large increase in Australian barley imports in 2014. This was argued to have caused a decline in production of -5.4% and land area of -13.1% over the 2014-18 period. However as can be seen in Figure 8, or through calculation of (compounded) annual averages, the declines in this period were no different to long term averages, and indeed there were several period of larger declines (e.g. from 2005, 2008-2011 or 2008-18).

This suggests that there may be many reasons for long and short term decline in Chinese barley production unrelated to the alleged dumping in 2017 and 2018. As pointed out in Australian submissions to the investigation, this includes the continuation of Chinese corn and wheat subsidies that sapped incentives for barley production. Minor crops like barley are not promoted and subsidised to the same extent, with minor exceptions.[33]

[33] In 2016 China had a program to expand production of crops like barley and sorghum in the "sickle region" in the north and the southwest of China but this doesn't seem to be reflected in the macro data. Mao, LX., Zhao, JF., Yan, LL., Yan, H., LI, S., L, YF (2016) Woguo "liandaowan" diqu chunyumi zhongzhi de qihou shiyixing yu tiaozheng jianyi (Climatic suitability of spring maize in the "sickle area" of China and recommendations on adjustment), *Yingyong shengtai xuebao Chinese Journal of Applied Ecology*, December 2016.

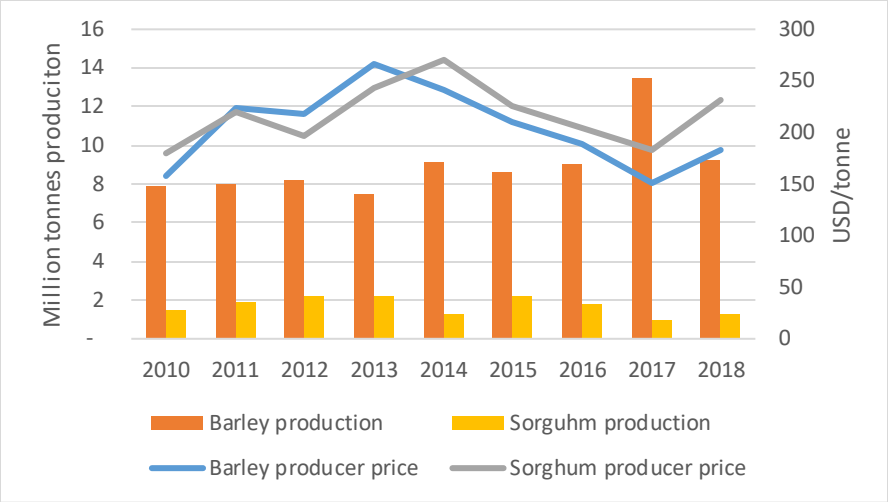

Figure 9: Australian barley and sorghum production and prices (2020-18).

Source: FAOStat, accessed May 27, 2020

Small-scale barley production in China may also be uncompetitive with large-scale barley production in Australia, although this does not in itself constitute dumping. Price levels in the period were also influenced by high rainfall in 2017 (especially in Western Australia),[34] which increased the barley harvest by 50% and reduced prices by 22% from 2016 to 2017 (Figure 10). Australian prices increased in 2018 (and 2019) but have maintained a similar price differential with Chinese prices over the period. Like many other industries, there are likely to be complementarities between Australian and Chinese barley (e.g. feed vs malting, grade).

The mechanisms by which Australia might have dumped barley are unknown. Australian farm subsidies would not seem to apply. The farm household allowance for drought and research and development programs are Green Box items under WTO rules. Irrigation infrastructure would also seem to comply if for water-saving and in any case is not relevant for the dryland areas that supply the majority of barley to China.

[34] ABARES (2017) *Australian crop report*, Australian Bureau of Agricultural and Resource Economics and Sciences, Department of Agriculture and Water Resources, Australian Government, Canberra. No.184. http://data.daff.gov.au/data/warehouse/aucrpd9abcc003/aucrpd9aba_20171205_cLBGH/AustCropRrt20171205_v1.0.1.pdf

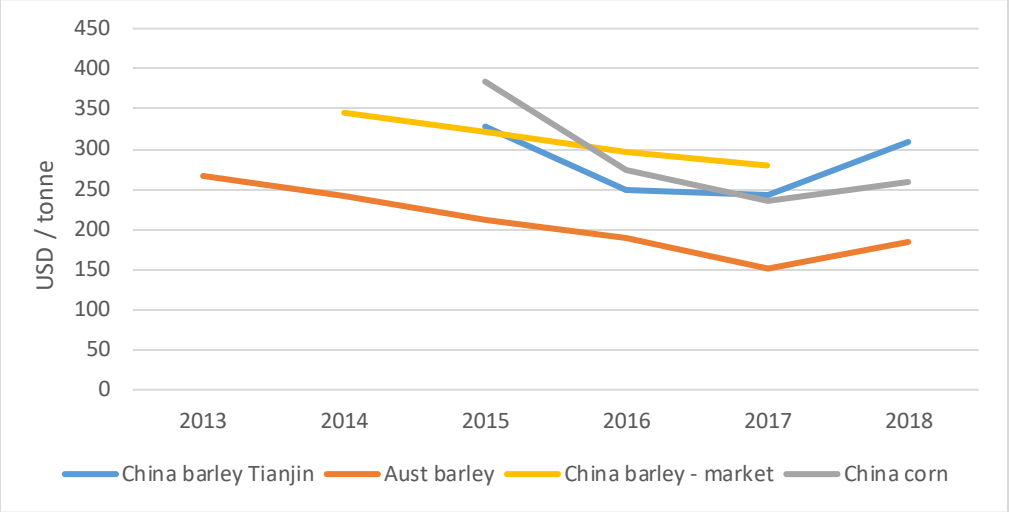

Figure 10: Barley prices in Australia and China (2013-18).

Sources: Australian barley (FAOStat, accessed May 19, 2020), China barley (Tianjin),[35] China corn,[36] and China barley (market).[37]

There are a number of reasons to suggest that the investigation was initiated for more strategic reasons. Most importantly, declining domestic production and increasing imports mean that China has become heavily reliant on imported barley, with domestic production making up only 20% of total supply (domestic production + imports) (Figure 11). This is an anathema to Chinese food security and self-sufficiency objectives. This applies even for grains like barely that are not key (guwu) grains (rice, wheat and corn), but fall into a broader category of (liangshi) grains.

Furthermore, the imports of barely flow from concentrated sources. Australia accounted for 65% of all barley imports in 2008-18, with spikes of up to 80%. China actively seeks to reduce reliance on limited sources for key grains, especially from channels that are not "secure" or "stable",[38] which may increasingly be the way China sees Australia. In the full spectrum of Chinese imports of key foods, imports of Australian barley has been held up as especially vulnerable to trade barriers, even drawing parallels with American soybeans (which is more difficult to solve).[39]

[35] Fangzheng zhongqi qihou youxian gongsi (Fangzheng Futures) (2018), Yumi huitiao youxian changqi shangzhang yumi, dianfen 2019 nian zhanwang (Outlook on the rise of long term calls for corn and starch in 2019), Xinlang caijing (Sina Finance), 26 December 2018. https://finance.sina.com.cn/money/future/fmnews/2018-12-26/doc-ihmutuee2670085.shtml

[36] https://mecardo.com.au/

[37] Zhonghua renmin gongheguo shangwubu (PRC Ministry of Commerce) (2018) Zhonghua renmin gongheguo damai chanye fanqingxiao diaocha shenqingshu: fujian (PRC Investigation Application on Anti-dumping in the Barley Industry: attachments), October 9, 2018. http://images.mofcom.gov.cn/trb/201811/20181119081758102.pdf

[38] Anon, (2019) Woguo zhulao liangshi anquan pingzhang (My country builds a barrier for food security). Zhongguo zh engfuwang (Website of the government of China). http://www.gov.cn/xinwen/2019-01/18/content_5358853.htm

[39] There were jokes that Australian barley may suffer the same fate as a shipload of American soybeans that were held up at sea for a month. Anonymous (2018) Ji "meiguo dadou" zhihou "aodaliya barley" ye liangliang After "American soybeans" will "Australian barley"

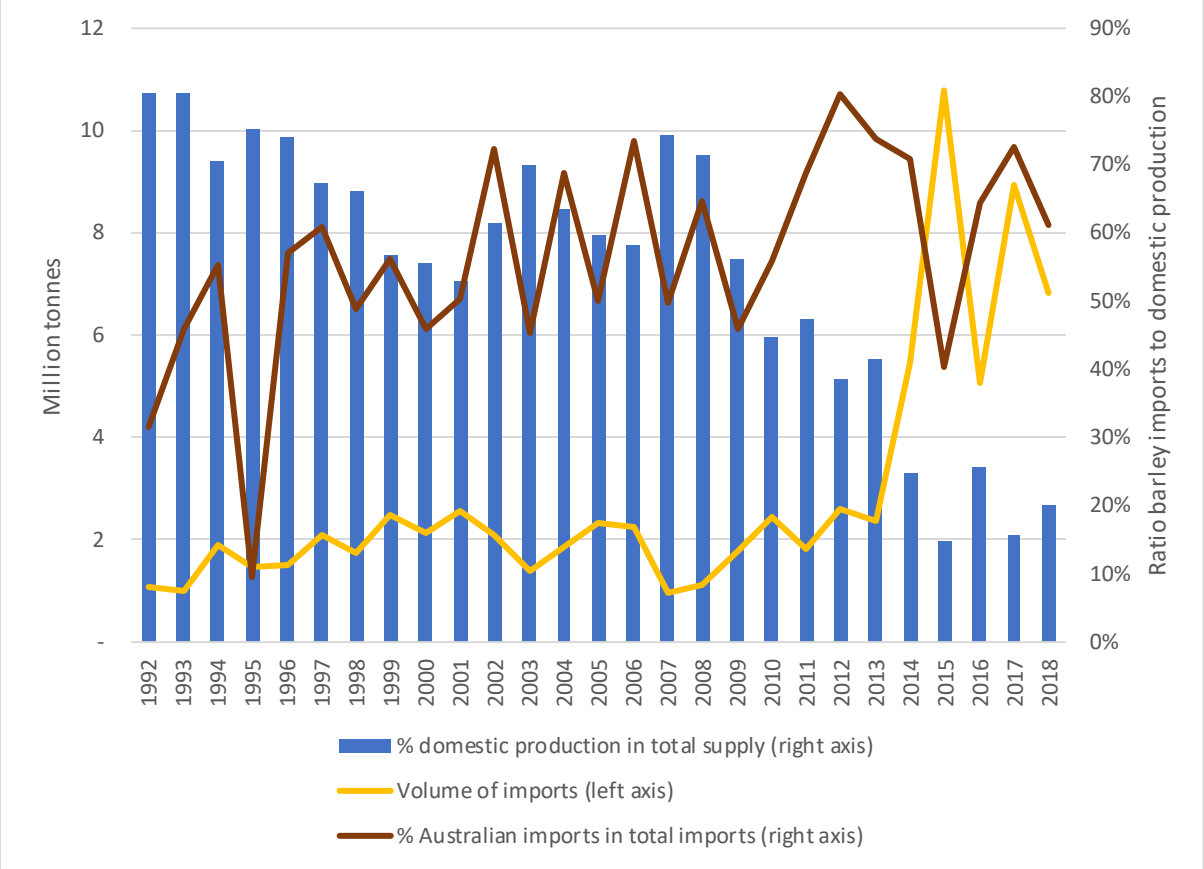

Figure 11. Indicators of China's reliance on barley imports

Source: UNComtrade, FAOSta, MOFCOM

Unlike corn (and wheat and rice), China does not apply import quotas on feed grains (barley, sorghum and distillers grain) while tariffs are only 3% preferential (or 25% tariff on US soybeans). Without a precedent for quotas and tariffs on barley, anti-dumping would be the obvious instrument. China has traditionally not targeted the domestic barley industry for subsidisation, so trade protection is an alternative form of support.

The import restrictions could be expected to hurt Chinese importers, including livestock producers and brewers, but perhaps not to the extent implied by the macro statistics. The demand for feed grain declined enormously in 2019 due to ASF. The slow response to ASF and flaws in the response meant that half of China's pig stocks (of 450 million) were culled,[40] although this is now recovering. There has also been a long term reduction in beer consumption in China, especially in the lower

suffer the same fate?, Xinlang caijing (Sina Finance), 22 October, 2018. https://finance.sina.com.cn/money/future/fmnews/2018-11-22/doc-ihmutuec2676234.shtml

[40] Patton, D. (2020) Special Report: Before coronavirus, China bungled swine epidemic with secrecy, *Reuters: Special Reports*, March 5. Available at https://uk.reuters.com/article/uk-swinefever-china-epidemic-specialrepo/special-report-before-coronavirus-china-bungled-swine-epidemic-with-secrecy-idUKKBN20S18U

quality segment (or "water beer"). Like many other industries,[41] policy makers are guiding a cut in capacity and the development of a more rationalised, higher value beer market. In these market settings of low demand and prices and industry restructuring, implementation of the anti-dumping case would not be as expensive for Chinese processors and consumers as it would be in a buoyant market.

The China Alcohol Association made a submission to the investigation arguing that the anti-dumping measures would hurt the brewing industry. It said that it would increase trade uncertainty and flow on to higher corn prices. It commented on the low production of many types of domestic barley, contamination, high variability and poor handling and storage.

These claims were dismissed by the claimant MOFCOM. It found that

- Domestic and imported Australian barley has similar characteristics and uses,
- That the anti-dumping measures would restore order to distorted markets,
- The measures would protect (*baohu, weihu*): growers, national economic security, agricultural security, chain integration and the healthy development of the domestic barley industry and
- That there was no clear evidence that the anti-dumping measures were not in the public interest.

A study estimated that an increase in the cost of Australian barley due the tariff and higher-priced substitutes (from Canada, Ukraine, France) would reduce gross margins of beer companies by just 1.2-1.5% (however COVID-19 will effect this result).[42] An industry analyst said that brewers would have to change production technologies to account for change in barley supplies, which would increase their costs, but can be offset by government subsidies.[43]

Effects of the barley tariff in Australia

In Australia, there have been estimates of the effects of the tariff reaching $5-600 million.[44] Details on how this was calculated were not provided, but this would account for all of the 2019 exports to China. However, many competing factors forge the effects, which are likely to be much lower.

[41] Brown, C.G., Waldron, S.A., & Longworth, J.W. (2005) *Modernizing China's Industries: Lessons from Wool and Wool Textiles,* Cheltenham, Edward Elgar Publishing. See at https://www.e-elgar.com/shop/gbp/modernizing-china-s-industries-9781843765912.html

[42] Sun Shanshan, Wang Yanhai, Zhang Xiangwei (2018) Dui Aomai zhengshou 73.6% de fanqingshui dui pijiu hangye yingxiang jihe? (What is the effect of the 73.6% anti-dumping tariff on Australian barley on the beer industry?), Xinshidai Zhengquan (New Era Securities), May 19, 2020. http://pdf.dfcfw.com/pdf/H3_AP202005191379944305_1.pdf

[43] Smith, M (2020), China's beer brewers bitter at barley plan, *Australian Financial Review*, 13 May 2020. https://www.afr.com/world/asia/china-s-beer-brewers-bitter-at-australian-barley-tariff-plan-20200512-p54s4i#:~:text=On%20Saturday%20Beijing%20gave%20Canberra,%2Dmonth%20anti%2Ddumping%20investigation.

[44] Anon, (2020) China barley tariff move confirmed, *Farmonline National*, 19 May. Available at https://www.farmonline.com.au/story/6761356/china-barley-tariff-move-confirmed/

The application of the 80.5% tariff will substantially reduce or prohibit Australian barley exports to China. The tariffs will apply for five years and even a successful challenge may last for years. From the week China issued warnings of the tariff (ending May 15), barley prices dropped from $270 to $230 per tonne, but prices had firmed by the week ending May 22.[45]

Unfortunately, many farmers especially in Western Australia, the largest export source for China, had by then planted barley. Alternative markets for malt barley include Japan, Vietnam, Thailand and India and for feed barley include Japan, Thailand, United Arab Emirates and Saudi Arabia. Saudi Arabia will become the largest market and set the floor price. There are reports of a 500,000 tonne sale tariff free sale to Indonesia in July related to the new trade agreement (IA-CEPA).[46]

Fortunately, lower barley prices for these farmers will likely be offset by a good crop. The many farmers that had not planted when the tariffs were announced have more options. With a 15-20% reduction in barley prices relative to wheat prices, these farmers can switch their winter crop into wheat (including for Indonesia) and other crops (including canola, oats, or pulses for India).

Because of the US-China Phase 1 deal and a phytosanitary protocol for barley,[47] [48] there has been some speculation that the US will capitalise on the gap in the China barley market left by Australia. However, the US is minor barley producer and indeed a net importer. Selling barley to China would require an enormous amount of substitution out of other winter crops (wheat and canola) and there are no obvious reasons why US farmers would do this at the scale suggested.

Australian beef exports to China

A different picture of the causes and effects of the Chinese trade barriers emerges for beef. The Chinese beef industry is the third largest in the world, producing almost three times as much beef as Australia. However, with rural transformation, the replacement of draught cattle with machines and the increasing value of rural labour, the Chinese cattle herd has contracted and beef supply has stagnated. Unlike food grains, demand for beef increases with rising incomes and urbanisation. The supply-demand alignments have increased the prices of beef (and mutton) by 200% over the last 10

[45] Wells, L. & Wells, H. (2020) Domestic: Feedgrain Focus: Barley firms after China Announcement, *Grain Central*, 4 June. Available at https://www.graincentral.com/markets/domestic/feedgrain-focus-barley-firms-after-china-announcement/

[46] Tan, S.L. (2020) Economy/Global Economy: Australia rules out trade war retaliation with China despite barley tariff escalation, *South China Morning Post*, 19 May. Available at https://www.scmp.com/economy/global-economy/article/3085007/australia-rules-out-trade-war-retaliation-china-despite

47 Donley, A (2020) China approves protocol allowing access to US barley, *World-Grain.com*, 15 May. Available at https://www.world-grain.com/articles/13696-china-approves-protocol-allowing-access-to-us-barley

48 Smith, M. (2020) China steps up warnings, buys US barley, Russian beef, *Financial Review*, 15 May. Available at https://www.afr.com/world/asia/china-steps-up-warnings-buys-us-barley-russian-beef-20200515-p54tag

years.[49] The Chinese government is concerned about price inflation of this magnitude, especially as beef and mutton is classed as a staple food for ethnic minorities (including Mongolian, Tibetan, Hui and Uyghur people).

The price increases have led to a massive increase in beef imports and China is now the largest importer in the world. In the 2010s, the vast majority of the imports (1-2 million tonnes) were smuggled from India, Brazil and the US through Vietnam and Hong Kong. The smuggled imports do not conform to Chinese disease protocols (for foot and mouth disease or mad cow disease), plant accreditation, inspection, or labelling regulations. Hundreds of thousands of cattle are also traded over the border from Myanmar, Vietnam and other parts of Southeast Asia with no or limited quarantine. [50] [51] China has a long history in smuggling[52] and it remains widespread for a large range of agricultural products, with very large impacts on the volumes and value of formal imports.[53] There are parallels with counterfeiting and adulteration in other commodities with countervailing effects on formal trade.[54]

To ease price inflation pressures, China has traditionally used smuggling as a mechanism that can be turned on and off with policy and market trends. However, China is now beginning to address smuggling due to biosecurity, food safety and (under the Xi Jinping regime) corruption issues. As a result, in 2014 multiple ministries coordinated and the State Council (Li Keqiang) gave the green light to formalise, liberalise and diversify beef imports in 2014.

[49] Edwards, B., Waldron, S., Brown, C., & Longworth, J. (2016) The Sino-Australian Cattle and Beef Relationships: Assessment and prospects. Available at http://www.asiabeefnetwork.com/wp-content/uploads/2019/10/191009-Sino-Aust-beef-trade-for-ABN.pdf

[50] Waldron, S., Luong, P., Smith, D., Hieu Phan Sy, Dong, XX., Brown, C. (2018) Macro developments in the China and Southeast Asia beef sector. *Animal Production Science*, 59, 1001-1015. https://doi.org/10.1071/AN17434 See also https://www.publish.csiro.au/an/AN17434

[51] CCTVnet (2014) Guangxi zhongyue bianjing niurou zousi nan genchu wei jing jianyi yinhuan da (The Guangzi border trade in smuggled beef is hard to eradicate and involves big risks without quarantine), *CCTVNet*. http://m.news.cntv.cn/2014/04/25/ARTI1398395055266366.shtml

[52] Thai, P. (2018) *China's War on Smuggling: Law, Economic Life and the Making for the Modern State*, 1842-1965, New York: Columbia University Press.

[53] Large flows of smuggled products in China include sugar, rice edible oils, tobacco, wine, timber, cashmere, beef, horticulture and seafood. Informal imports are often higher than formal imports and often associated food adulteration and safety problems (Si, Waldron, Brown (forthcoming) Agricultural Internationalisation and Anti-Smuggling Measures in China: The Case of the Myanmar-China Cattle Trade.

[54] Counterfeit wine ("Benfords") has reduced the import of genuine Australian product. https://thediplomat.com/2018/08/the-benfords-debacle-counterfeit-australian-wine-floods-china/ The adulteration of Chinese milk – by mixing a chemical used to make plastics (melamine) into milk to increase protein levels in testing – led to increases in Australian dairy exports and then Chinese FDI in the Australia dairy sector.

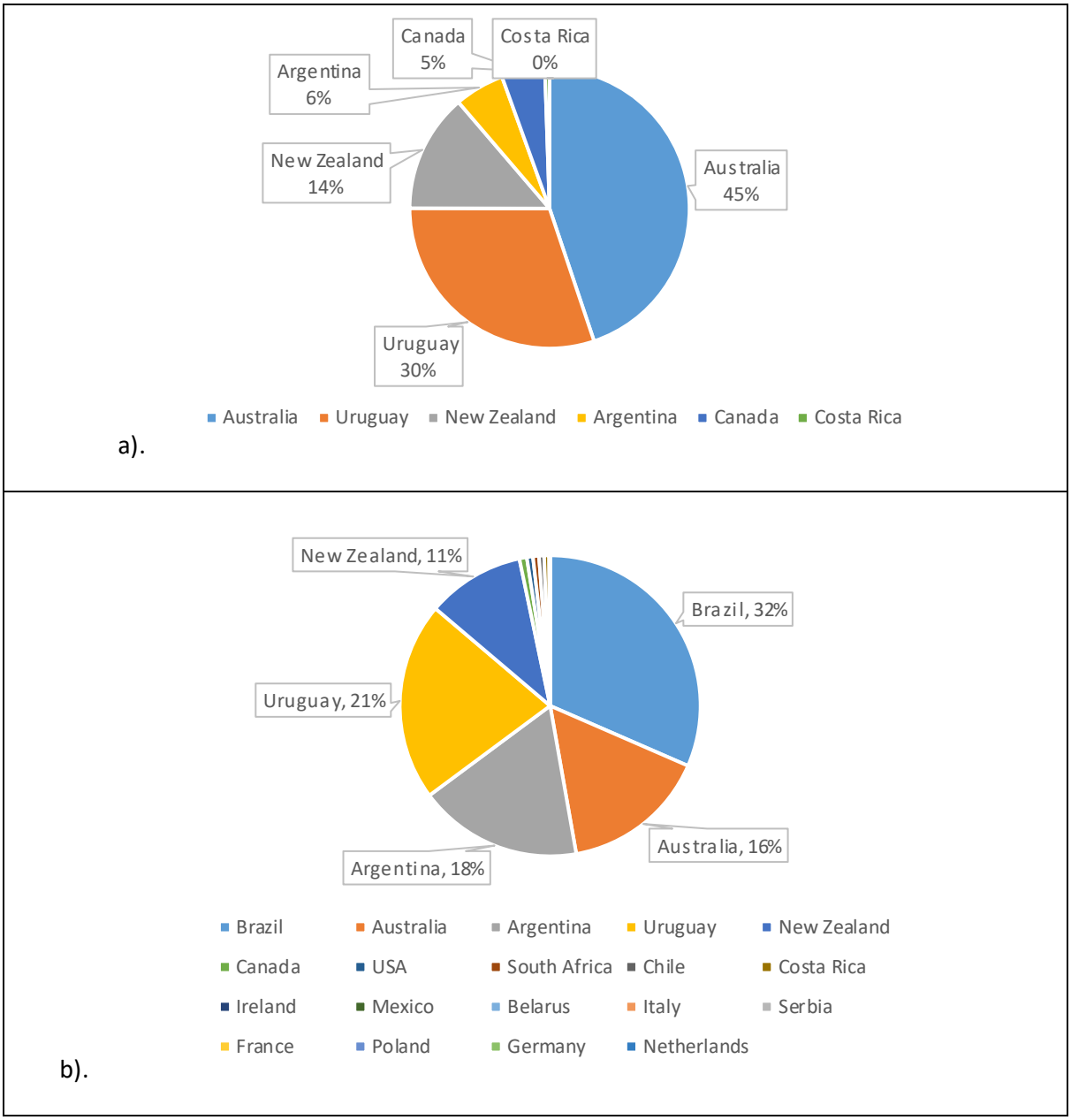

Figure 12 a) and b): Sources of frozen beef imported by China, a) 2014 and b) 2018.

Source: DAWE[55]

Australia was one of the first countries to establish in the formal beef market through favourable disease status and plant accreditation, bolstered by the phasing out of tariffs under ChAFTA and an animal health protocol for the export of live cattle (although this is too restrictive for any significant trade). Australia's overall market share has eroded as China has sought to increase volumes and diversify imports, mainly through disease protocols and plant certification (Figure 12). From just a handful of countries certified to export to China, there are now about 30. Initiatives to formalise

[55] DAWE (nd.) *Red meat export statistics 2018*. Department of Agriculture, Water and the Environment, The Australian Government. Available at https://www.agriculture.gov.au/export/controlled-goods/meat/statistics/red-meat-stats-2018

Indian buffalo meat export to China have stalled, which is significant as India is the largest source of bovine meat (from buffalo) in the world.

While disease protocols can be interpreted in various ways to achieve objectives, they are relatively unmalleable and often based on international standards (World Organisation for Animal Health). Tariffs and quotas are set with bilateral and multilateral agreements. However, plant certification and labelling are more discretionary, made unilaterally by Chinese agencies (Quarantine and Customs).

The expansion of countries with disease protocols for China has led to a large backlog of plants internationally waiting for certification that can take years to finalise and again can be used as a tap to turn on or off for political or market reasons. Australian industry and government have invested enormous resources for many years into increasing the number of plants certified to export to China to at least 20.

With fundamental market drivers and crackdowns on illegal smuggling, formal imports into China from all sources have surged. Even with a decline in the Australian share of the overall market, Australian beef imports have been steady from 2013 to 2018 (Figure 13). There was a large increase in 2018 to 160,000 tonnes worth AU$1 billion. Australian exports increased 84% in 2019 to 300,000 tonnes due to ASF in China and destocking due to drought in Australia. There is a similar pattern for sheep meat.[56]

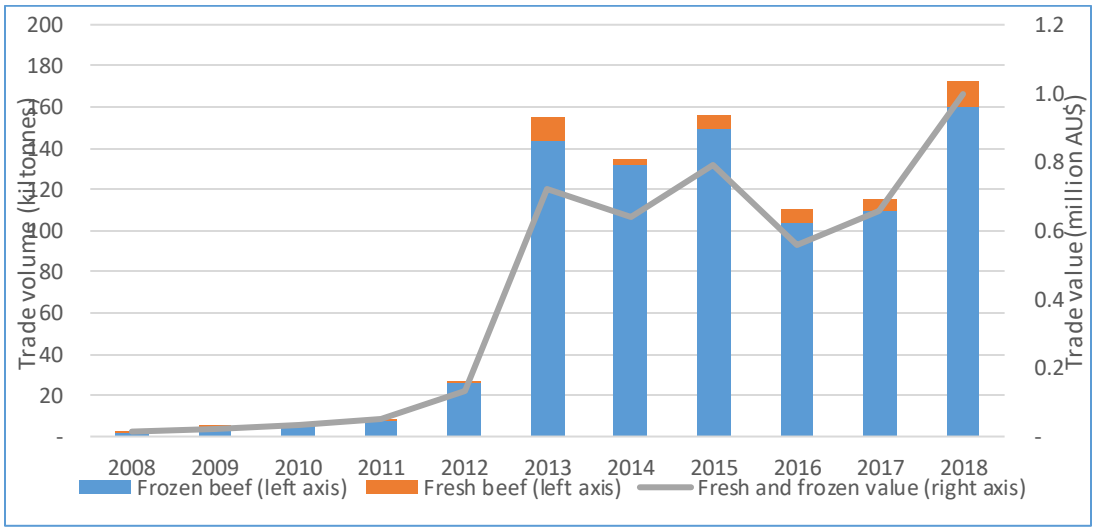

Figure 13: Australian beef exports to China (2008-2018).

Source: UNComtrade, accessed May 30, 2020

[56] DAWE (nd.) *Red meat export statistics 2018*. Department of Agriculture, Water and the Environment, The Australian Government. Available at https://www.agriculture.gov.au/export/controlled-goods/meat/statistics/red-meat-stats-2018

Plant suspension

In the current case, China has suspended (not de-listed) four plants – Kilcoy Pastoral, JBS Beef City, JBS Dinmore and the Northern Cooperative Meat Company – due to "inconsistencies with labelling and consignment certificates for some frozen and chilled beef products".[57] These technical barriers to trade (TBTs) are not new. There were holdups to exports due to plant certification including delisting in the early 2010s and 2017. There were other holdups due to labelling, including shipments of beef in 2014. There holdups have in the past been arisen from discrepancies in translation in dual language labelling and documents that are lost in transit.

The national food quality supervision and inspection centre collects data on consignments of food imports that don't meet national standards. These were analysed in two periods – 2019 and Jan-April 2020. Company names have been removed.

Data for 10 months of 2019 shows a total of 1,050 cases. Of these 38 relate to beef, nearly all of which were frozen. There were only nine cases of Australian beef from six plants. One plant accounts for three cases, another for two, and four plants account for one each. Six of the cases occurred in October, five of which were in Shanghai, which is known to be strict. 29 are from other countries, of which 14 were from the US (one company in particular) and NZ and Argentina. The stated reasons were mislabelling (标签不合格), non-conforming goods certificates (货证不符) and unmet inspection and quarantine requirements (未获检验检疫准入).

490 food consignments were held up from January to April 2020, of which 24 were for beef. 11 of these were from Australia, with one company making up seven of the cases and other two each. Casino didn't appear. All cases were recorded in Shanghai port in January. There were another nine beef cases from Brasil, one chilled lot from New Zealand and a few others. (Two cases of Australian oats were pulled up for food additives and contamination - aligns with reports that oats may be targeted in future barriers).

These are no doubt genuine cases and customs authorities could no doubt produce evidence and samples. However, as pointed out by importers and processors in China, "no single plant can comply fully on every single carton". [58] The total weight of the Australian beef pulled up in 2019 is one tonne of the 1.66 million tonnes of Australian beef exported in that year – or 0.0006%). While most infringements of food imports are spread over few cases per month, in the case of Australian beef,

[57] MLA (2020) *Australia's beef trade with China*, Meat & Livestock Australia, 14 May. Available at https://www.mla.com.au/news-and-events/industry-news/australias-beef-trade-with-china/

[58] Tan, S.L. (2020) Economy/ China Economy: Australian beef exporters banned by China are repeat offenders, but New Zealand firms escape sanctions, customs data shows, *South China Morning Post*, 19 May. https://www.scmp.com/economy/china-economy/article/3084911/australian-beef-exporters-banned-china-are-repeat-offenders

the cases were concentrated in particular months (Oct 2019 and Jan 2020 and in the latter one case one company). There are always cases to pull up if the authorities are targeting a particular country or commodity

The effects of plant suspension

As publicised by the major peak industry body, Meat and Livestock Australia, the Australian beef industry as a whole is relatively resilient to shocks from China. Australia sells beef to 100 countries with no country making up more than 25% of market share. The dependency is low compared to some other Australian agricultural industries and other countries for beef (especially Uruguay, Argentina and New Zealand).[59] Because of the modest proportions of Australian beef sold into China, price movements in China have insignificant impacts on prices in Australia. The Indonesian market has a much larger impact in that regard.[60]

The broader effects of the four temporarily suspended abattoirs will be low for the industry and producers as a whole. The plants make up a modest proportion of overall Australian exports to China and there are dozens of other plants that sell to China. In wake of COVID19, beef production in the US plummeted and prices nearly doubled, which provided an outlet, especially for manufacturing meat. One of the suspended plants is able to divert cattle to another plant in the same company structure not suspended for exports to China, albeit with higher freight costs.

However, the effects of these or any expanded measures vary considerably by the different types of beef exported into different market segments. A breakdown of the various categories of Australian beef exported to China appears in Figure 14. In general, but with variation by consignments, chilled beef enters the higher value premium products and cuts, frozen beef is more generic and lower value, while CS refers to carcasses.

[59] MLA (2020) *Strong finish to 2019 for China import but short-term disruption expected*, Meat & Livestock Australia, 6 February. Available at https://www.mla.com.au/prices-markets/market-news/strong-finish-to-2019-for-china-imports-but-short-term-disruption-expected/

[60] Dong, X., Waldron, S., Brown, C. & Zhang, J. (2018) Price transmission in regional beef markets: Australia, China and Southeast Asia, *Emirates Journal of Food & Agriculture*, 30(2), February. Available at https://www.ejfa.me/index.php/journal/article/view/1601

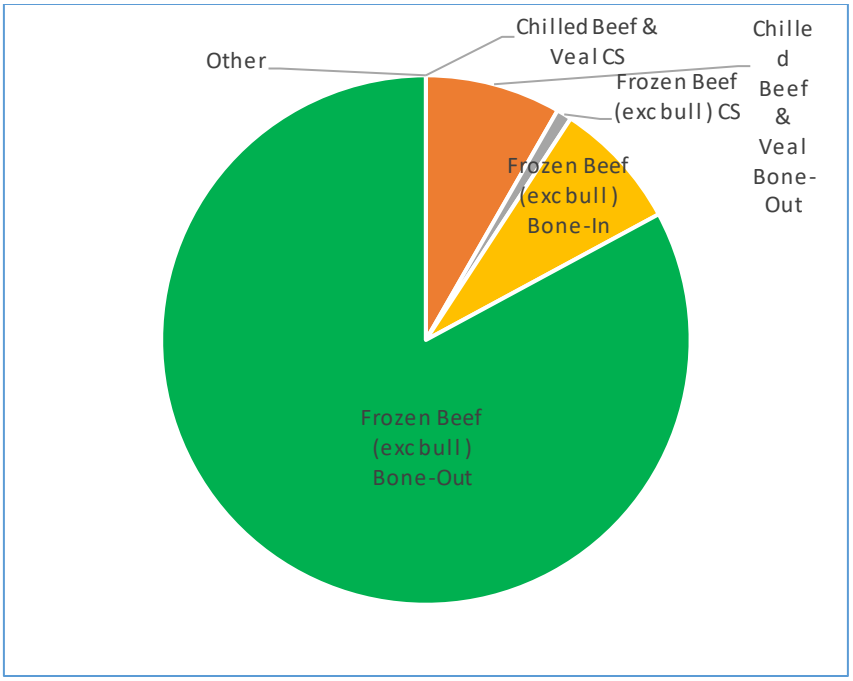

Figure 14: Australian beef and veal exports to China by category (2008).

Source: DAWE[61]

While there has been significant publicity about China's appetite for premium Australian beef, these are eclipsed by the more generic product including secondary cuts, offcuts for manufacturing or for the mass market. As a rough guide, frozen exports accounted for 93% by volume in 2018 and 89% of value. It is important to note, however, that although the price of this product is low in relative terms, it is important for overall carcass utilisation and value. The suspended plants and the broader Australian industry, can access numerous other markets for this type of product (e.g., the US, Japan and Russia).

Fresh or chilled beef only accounts for 7% of the total volume, but because of the higher price, accounted for 11% of the value in 2018, which is typical of other years. As a general guide, fresh or chilled product (which is bone-out) is higher value and can include loin cuts, wagyu and angus beef, is often grain-fed and must be certified as free of hormone growth promotants. The four plants that were suspended exported a significant proportion of their premium beef to China and together account for perhaps 30% of the high-value beef exported to China. There are alternative markets for this product, with all four suspended Australian plants selling to dozens of other countries including high value markets in countries like South Korea. However, the plants and the producers that had consignments booked in will incur price discounts in finding alternative buyers. It will also involve a

[61] https://www.agriculture.gov.au/export/controlled-goods/meat/statistics/red-meat-stats-2018

greater number of sales to smaller buyers in the hotel and restaurant trade, so will also incur higher transaction costs.

Another aspect of the Chinese market that is attractive to industry, is that there is high demand for carcasses (which are quarters, indicated in the CS category in Figure 14). Exports of this category of product to China increased five-fold from 2018 to 10,000 tonnes in 2019. These can be sold in large volumes, with full carcass utilisation, low transaction costs and low butchering costs (which are higher in Australia than in China). In a similar vein, China is a good customer for "full sets" (of primal cuts that appear in both the chilled or frozen category).

An escalation of the trade barriers to China to cover significant proportions of the industry, or higher value parts of it, would affect the industry through reduced overall demand and prices. However, these effects would be offset by adjustments to procurement and marketing strategies. As mentioned, higher value product would be sold in smaller consignments to more buyers. The smaller market for quarter carcasses and full sets would mean more differentiated butchering and sales, although there can be benefits to this as it allows for more differentiated pricing, compared to the price averaging in sets and quarters. It would entail higher labour inputs in Australia, which is significant as abattoirs are the largest regional employers in Southeast Queensland and Northern New South Wales.

It is conceivable that China's decision to target the four specific plants was related to their orientation to higher value markets. This would not affect the prices in generic markets that China is most sensitive to. The higher value market also gets the most publicity.

It is also interesting to note that the Chinese beef market was volatile in 2019-20 when the customs cases were made. As noted by MOFCOM,[62] Australian exports to China in 2019 were at an all-time high, when beef prices in China increased by 30% due to ASF. Importers that signed at the top of the market were disappointed to see price drops in December to January, leading to delayed shipments, renegotiation and reneging.[63] The market then appeared firm for Chinese new year at the end of January (presumably through in home consumption due to COVID-19 restrictions) and then declined in line with pork prices (suggesting recovery from ASF) (Figure 15).[64]

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[62] Zhonghua renmin gongheguo shangwube (MofCOM) (2019) Aodaliya duihua niurou chukou 9 yue chuangxin gao (Australian beef exports to China reach new heights in September), October 11, 2019. http://www.mofcom.gov.cn/article/i/jyjl/l/201910/20191002903488.shtml

[63] Anon. (2020) Aozhou niurou turan jiangjia 25%! Bufen zhongguo maijia chexiao hetong, jushou niurou dailiu gangkou (The price of Australian beef suddenly dropped by 25%! Some Chinese buyers cancel their contracts and refuse to accept beef in port). Aozhou xinwen (Australian News), January 9, 2020. https://www.huaglad.com/aunews/20200109/373531.html

[64] MLA (2020) *Strong finish to 2019 for China import but short-term disruption expected,* Meat & Livestock Australia, 6 February. Available at https://www.mla.com.au/prices-markets/market-news/strong-finish-to-2019-for-china-imports-but-short-term-disruption-expected/

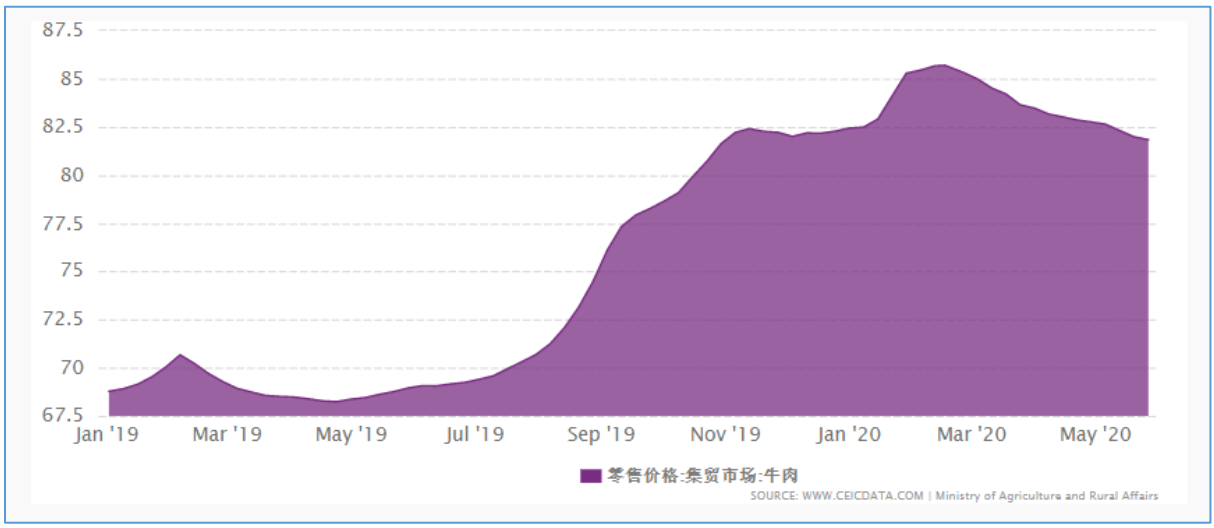

Figure 15: China wholesale beef prices (2019-2020).

Source: CEICDATA[65]

[65] https://www.ceicdata.com/en

Risks in the Sino-Australian agricultural trade

The cases of barley and beef provide insights into the broader benefits, costs and risks of Australian agriculture's close trading relationship with China. In general, Australian farmers and agribusiness firms have benefited enormously from the trade due to the underlying drivers of supply and demand and complementarities that thrive under stable conditions. However, the risks of dealing with China are considerable and increasing and many Australian agricultural industries are heavily exposed to the risks.

As shown in this paper, risks derive from multiple sources including China's domestic structures and policy, politicised trade policy and challenges to rules-based trade. Sources of volatility from within China overviewed in this paper include interventionist policies, subsidisation, stockpiling, diversification policy, smuggling, corruption and crackdowns, animal and human disease outbreaks, food safety crises, adulteration and counterfeiting. Some of the effects have worked in the favour of Australian exporters (e.g. a crackdown on smuggling) and others have worked against (e.g. diversification policy). However, most developments have ambiguous effects (e.g. subsidies for domestic industries or ASF which increased the demand for beef but decreased the demand for barley). There are multiple planned and unplanned outcomes and corrections. These major policy-driven events have all occurred in China over the last five years and are likely to happen again in one form or another. They are not unique to China, but they happen in China on an unparalleled scale and Australia is heavily exposed to the effects.

Politicised foreign trade policy adds another layer of (downside) risk. In this regard it is worth overviewing the stakeholder dynamics that form trade policy. In recent decades trade policy has been made in consultation with agencies including: line bureaus (e.g. agriculture vs commerce); industry associations (that usually represent processors or traders most affected by the barriers); industry and market analysts in academies and universities; and a handful of senior experts. Jurisdiction is held by the responsible agencies (e.g. quarantine, customs and trade).[66] There is often competition, conflicts and miscoordination in the system, but this is disciplined by pragmatism and strategic objectives. Stakeholders sometimes lock themselves together in hotels for days to develop a domestic or trade policy. Some Chinese stakeholders describe dealing with (*chuli*) foreigners as fun (*hao wanr*).

[66] In the case of wool in the Sino-Australian FTA see Waldron, S., Brown, C. & Longworth, J. (2011) Agricultural modernization and state capacity in China. *The China Journal,* (66), 119-142. Available at https://www.jstor.org/stable/41262810?seq=1#metadata_info_tab_contents

The system has traditionally provided counter-balancing effects and facilitated trade on the basis of competitive advantage. In the Xi regime however, final decision-making power is becoming more concentrated in super-ministry or Party bodies units which, perhaps more importantly, sends signals that permeate through administrative and social units. These settings contribute to a more politicised trade policy.

As illustrated in the case of barley and beef however, politicised decisions are aligned with – or constrained by – market trends and conditions, based on advice from the stakeholders. It is reported that China has drawn up a hit list of Australian industries for further sanctions (dairy, wine, seafood, oatmeal and fruit) in which case, there would also be a list technical or trade grievances.[67] If so, the industries chosen are most likely to be in an industry or in a market cycle, where the measures would benefit, or minimise costs, to China. Measures are most likely to be those that can be taken in a flexible and low-cost way and where plausible deniability can be maintained (for example, certification, labelling and dumping). It is significant that wool is not on the list, even though China buys 80% of Australia's wool production.[68]

An additional layer of risk derives from economic nationalism and challenges to rules-based international trade from a range of countries, not least of which is the US. The veracity of these cases are beyond the scope of this paper, but Australia has raised 18 dumping cases against China. China appears to have only applied 4-5 trade remedy cases for agriculture worldwide, of which Australian barley is one[69], but hundreds in other sectors and is argued to be a "fast learner".[70] The case of barley shows the extent to which China is willing to challenge international trade rules, based on poor evidence.

[67] Hutchens, G. (2020) Analysis: China will have to be mindful of which Australian exports they target next if they don't want to hurt their own interests, *ABC News,* Australian Broadcasting Corporation, 23 May. Available at https://www.abc.net.au/news/2020-05-23/china-considers-escalating-trade-war-coronavirus-covid19-inquiry/12278672 ; Visontay, E. (2020) Australian economy: After barley, what next? Australian industries exposed if China trade tensions persist, *The Guardian*, 20 May. Available at https://www.theguardian.com/business/2020/may/20/australian-wool-producers-particularly-exposed-if-trade-tensions-with-china-rise .

[68] The macro stats suggest that the Australian wool industry is heavily exposed to China. 80% of Australian wool (not just exports) is sold to China, with only small alternative markets (India, Vietnam). China does produce a lot of wool but almost all of it is much coarser and much more poorly prepared and sorted and hence of a lower grade than wool imported from Australia. Virtually all the domestically grown wool is used in the lower-value woollen sector and does not compete with imported Australian wool in the higher value worsted sector, used to produce higher end garments like suits. China has ambitions to move up the global value chain and develop the domestic market for these high value products. https://www.e-elgar.com/shop/gbp/modernizing-china-s-industries-9781843765912.html . Brown, C.G., Waldron, S.A. and Longworth. J.W. (2011) Specialty products, rural livelihoods and agricultural marketing reforms in China, China *Agricultural Economic Review*, 3 (2), 224-242. Short of a full-blown trade war, China is unlikely to cripple this industry through trade sanctions on Australian wool. There may be similarities with coal. https://www.abc.net.au/news/2020-05-25/china-and-australia-trade-relations-who-really-holds-the-power/12281608

[69] Zhongguo maoyi juiji xinxiwang (China trade remedies information net)

http://cacs.mofcom.gov.cn/cacscms/view/statistics/ckajtj

[70] Zhou, W. (2018) Business+Economy: Barley is not a random choice: Here's the real reason China is taking on Australia over dumping, *The Conversation*, 23 November. Available at https://theconversation.com/barley-is-not-a-random-choice-heres-the-real-reason-china-is-taking-on-australia-over-dumping-107271

Risk management in the Sino-Australian relationship

Questions arise about the capacity of Australian agricultural interests to respond to volatility in China's domestic agricultural policies, the politicisation of trade policy and a more uncertain multilateral trading system. This paper shows the way that farmers, firms and traders can respond reactively – that is ex-post – to shocks from China, including by switching markets and product lines.

Laurenceson and Zhou (2020) [71] argue that economic agents exposed to China already implement sufficient risk management systems as "standard practice". They further dismiss the notion that Australia is over-reliant on China as a "zombie idea" and go on to argue against "forced" diversification which, although not defined, suggests that government should not play an active or leading role in diversification.

There are several problems with this set of arguments. On a methodological note, their analysis is only based on a desktop analysis, English-language sources and aggregated data. It does not capture policy, stakeholder, market and segmented market dynamics, either in Australia or China, that drive trade, risks, effects and mitigation strategies. The risks that derive from Chinese structures or domestic and international policies are not mentioned.

Laurenceson and Zhou's argument also assumes that economic agents have adequate knowledge of the risks or that knowledge of the risks can be quickly obtained and implemented. It is however unrealistic to expect busy individual managers or farmers to understand the plethora of risks that emerge from China, such as those outlined in this paper. They rely on a thick institutional environment that includes, peak farmer bodies, industry bodies, state government (agriculture, trade, development, that have whole units dedicated to promoting trade and investment of targeted commodities in targeted markets), departments in Canberra and overseas relevant to international agriculture (disease, health and trade protocols, development assistance, agricultural attaches in DAWE and ABARES). Various academics, journalists and consultants also provide services.

Any increased understanding and management of risks from China will require increased coordination between these bodies and increased investment in market and policy intelligence.[72] Government and government policy plays an important role in this regard. These groups are typically

[71] Laurenceson, J. & Zhou, M. (2020) *COVID-19 and the Australia-China relationship's zombie economic idea*, The Australia-China Relations Institute (ACRI), University of Technology Sydney, May 2020. Available at https://www.australiachinarelations.org/sites/default/files/20200507%20Australia-China%20Relations%20Institute%20report_COVID-19%20and%20the%20Australia-China%20relationship%E2%80%99s%20zombie%20economic%20idea_James%20Laurenceson%20Michael%20Zhou.pdf

[72] Longworth, J., Brown, C. and Waldron, S (2012) Policy intelligence: the key to doing business in the agricultural sector of China. *Agricultural Science*, 24 1: 22-22. https://search.informit.com.au/documentSummary;dn=404530048220532;res=IELHSS

funded from private-public, levy-public, or public sources to generate not just private goods but also public goods. Government also oversees various export schemes. [73]

The environment in Australia, China and in the bilateral relationship is however becoming less conducive to the conduct of detailed and applied market and policy intelligence. Investment from some Australian industry bodies in understanding and integrating with Chinese domestic industries is declining. This is significant also as these bodies have an important role in informal (non-government) discussion and the resolution of trade issues. At the same time, changes in the Chinese regime make it harder for foreign researchers and journalists to obtain visas and permits to do detailed, first-hand research. There are official and unofficial restrictions on agricultural data that can be made public or that can be shared with foreigners. There is a shortage of Australians with training in Chinese studies and language.

It should also be understood that even a highly resourced and coordinated system cannot foresee many risks that emanate from China. As outlined in this paper, risks can come from deep-rooted, often opaque and fast-moving sources. Even if the risks can be foreseen, they can hardly be seamlessly transmitted ex-ante to a multitude of very busy Australian farmers and managers or implemented within production and cropping cycles.

The implication is that if enough evidence mounts that the nature and direction of the Chinese regime generates high risks, then rather than constantly forecasting, dodging and responding to shocks, part of the response is to reduce exposure. Lobbying government to "fix" problems in the bilateral relationship ex-post, as in the case of the wine industry, is a not a legitimate risk management strategy.[74]

A final criticism of Laurenceson and Zhou (2020) is the notion that Australian stakeholders should not take a pro-active, co-ordinated, long-term approach to diversify is that this is the polar opposite of China's approach. This applies to many sectors, including agriculture where China actively seeks to diversify import sources for reasons of national interest and security.

[73] This includes the Export Finance and Insurance Corporation, Export Market Development Grants Scheme and Asian Business Engagement Plan Grant.

[74] Australian wine exports have risen dramatically to China, occasionally interrupted by factors such policy on corruption (which reduced banqueting), counterfeiting and then in 2018 and a go-slow on imports speculated to be due to rocky bilateral relationships in that year (Huawei, foreign interference, Heng Yangjun). The wine industry responding by demanding federal government fix the problems. Tillett, A. (2018) Politics: Winemakers demand Malcolm Turnbull step in to ease China wine woes, *Financial Review*, 5 June. Available at https://www.afr.com/politics/winemakers-demand-malcolm-turnbull-step-in-to-ease-china-wine-woes-20180604-h10yi9

The costs and benefits of Sino-Australian trade

Although diversification will reduce exposure to shocks over the longer term, there will declines in aggregate demand that generate net costs. An important aspect of Australia's relationship will be to quantify to the costs and the willingness of (various groups in) society to pay the costs.

Giesecke et al. (2019) provide an important initial step in this process.[75] In 2018, Chinese authorities held up shipment of Australian thermal coal in Dalian Port, which was speculated to be in to retaliation to several preceding Australian government decisions (excluding Huawei from the national 5G network, introducing the Foreign Espionage and Interference Act, deporting Huang Xiangmo on national security grounds and friction on Yang Hengjun). The immediate problem was solved and trade resumed at low cost, but the dispute could have escalated. In a scenario of a permanent cut of 25% of Australian coal exports to China, GTAP trade modelling was used to estimate the effects. Even though the trade is worth AU$15 billion per year and makes up 1% of domestic consumption, a 25% cut in coal exports to China equates to a reduction of just 0.04% of domestic consumption or $24 per person year. These effects are low due to trade diversion, substitute activities for labour, foreign ownership and tax.

The immediate costs of the trade barriers imposed on barley and beef to Australian society are minor. The value of the barley and beef trade to China are about one-fifteenth of coal and little of the beef trade is affected. The industries have much larger scope for market and product substitution than coal. Three of the four abattoirs are foreign owned, which is common in Australian agribusiness.[76] While the costs of the NTBs are borne disproportionately by affected stake-holders (producers), the net effects for Australian society as a whole are offset by lower prices domestically (for consumers, brewers and feedlots). Thus, if the net effects of China's NTBs equate to, say, $1 per person, the Australian population could be asked of their willingness to pay this amount in exchange for facilitating an inquiry into COVID-19.

Recommendations

The paper makes five recommendations. The first is that the Australian government take the Chinese anti-dumping case on barley to dispute resolution at the WTO. The Australian government is reported to be confident in its case, which is supported by the analysis in this paper. This would

[75] Giesecke, J.A., Waschik, R. & Tran, N.H. (2019) Modelling the consequences of the U.S.-China trade war and related trade friction for the U.S., Chinese, Australian and global economies, *CoPS Working Paper No. G-294,* July 2019, Centre of Policy Studies, Melbourne University. Available at http://www.copsmodels.com/ftp/workpapr/g-294.pdf

[76] Hutchens, G. (2020) Analysis: China will have to be mindful of which Australian exports they target next if they don't want to hurt their own interests, *ABC News,* Australian Broadcasting Corporation, 23 May. Available at https://www.abc.net.au/news/2020-05-23/china-considers-escalating-trade-war-coronavirus-covid19-inquiry/12278672

reinforce Australia's commitment to rules-based international trade and set a precedent for other industries, China and other countries. The Australian government may be concerned about escalation and retaliation from China but as also shown in this paper, the potential costs are manageable.

Second, Australian government and industry agencies should invest more in market and policy intelligence in China. As mentioned above, Australia has an existing network of stakeholders and analysts. However, more resourcing, more China-specific skills and more communication with industry stakeholders is required. The climate for in-country research and collaboration in China is deteriorating but this may partly be overcome by cooperation with other bodies (such as USDA Foreign Agricultural Service) and equivalents in other major exporting countries. Communication with firms and farmers will be critical.

Third, Australian government and industry agencies should invest more in developing market access protocols and industry-to-industry links in alternative agricultural markets. One of the features of the agricultural sector is that there are large number of markets for most agricultural products. Especially for bulk commodities, value chains are relatively straightforward, compared to manufacturing where multiple segments and components of the value chain can be inter-connected in multiple jurisdictions. Australia's biosecurity and food safety status are major sources of competitive advantage, and many countries are running up against resource limits in agriculture.

Fourth, Australian farmers and companies should incorporate – ex-ante – the risks of exporting to China in market, product and management decisions. Arguments that this is already done are not borne out in evidence, especially for farmers and small firms. Fifth, Australian cattle producers and abattoirs exposed to the high value segment of the Chinese market should incorporate the risks of holdup and the costs of watertight compliance to administrative rules into sales prices and contracts.