

Canadian BRM: A Study in Syntax and Mythical Changes¹

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¹I was invited to present a two-hour lecture at the 2020 Canadian Agricultural Economics Society Annual Policy Conference (January, 2020) on BRM programs. The lecture was attended by over 100-150 participants; much of this brief comes from that presentation.

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I welcome the opportunity to provide this brief to the House of Commons Standing Committee on Agriculture. In Canada, as with the U.S. and the E.U., the formation of a new agricultural policy framework is notoriously arduous and takes multiple years of negotiation. As a result, very little changes from one BRM policy to the next, and, generally, those changes are dictated by the size of the government transfer to farmers. The last four policy frameworks are case in point; underlying structure remains constant, syntax changes, and parameters are altered to align with budget restrictions. While this may seem an indictment, it is not. A cursory look at agricultural trade numbers clearly indicates that Canadian farmers are now, and have always been, competitive internationally in most commodities (canola, wheat, cattle, pork; notable exceptions include supply managed products). Canada continually exports in excess of 50% of the agricultural products produced. It is difficult to argue that Canadian BRM programs have hindered the competitive position of farmers with these trade numbers as a backdrop.

Nonetheless, BRM represents the largest government transfer of public funds to farmers, and so a number of questions is worth asking. What has changed under CAP and should it have changed? What has not changed under CAP and should it change? What flaws exist in the current suite of BRM programs? What alternatives to current programs exist? What public funds are required for possible alternative programs?

I am a tenured academic economist -- not a farmer, not the government -- on the outside of BRM looking in through hazy glasses.³ Moreover, as Posner (2001) notes "...academics are often smart and stupid, and this may not be sufficiently recognized ... they are particularly likely to be both smart and stupid in an area of specialization..." I would ask that the committee take my comments in the following light: unbiased, researched for over 25 years, but, nonetheless, prone to "outsider" error.⁴

The outline of this brief is as follows. The first section presents a brief discussion of current BRM programs. The second section poses ten random but possibly important questions for consideration by the Standing Committee. The third section reflects on the latest BRM Expert Review recommendations. The fourth section discusses other possibly important thoughts. The fifth section discusses COVID-19 and BRM policy. The final section presents some concluding thoughts. Each section is relatively self-contained.

1 BRM Policy under CAP

The BRM suite of programs under the CAP framework consists of AgriInvest, AgriStability, AgriInsurance, and AgriRecovery. AgriInvest is essentially an annual direct payment program to farmers up to the maximum of 1% of net sales or \$10,000.

AgriInsurance is a heavily subsidized multi-peril crop insurance program that provides protection against yield (not price) losses.⁵ This program is not available for livestock losses (e.g. beef, pork, etc.). Moreover, this highly favours crops whose main volatility is production, not price.

AgriStability covers declines of more than 70% of a farmer's net margin. AgriStability is designed such that the farmer absorbs a portion (30%) of any realized losses (termed co-insurance).⁶ Participation in AgriStability has been steadily declining in recent years since the government changed the parameters and

³This "hazy glasses" situation is exacerbated by the lack of public data on Canadian BRM programs. In comparison, a visit to the USDA Risk Management Agency summary of business website (<https://www.rma.usda.gov/SummaryOfBusiness>) offers the public a thousand fold more information than provincial Crown Corporations and Agriculture and Agri-Food Canada.

⁴I have published peer refereed articles in the top-rated academic journals in insurance and agricultural economics. I have published on many aspects of crop insurance, including rating methodologies, actuarial soundness, climate change and insurance, and re-insurance. I have routinely advised the United States Department of Agriculture's Risk Management Agency on matters of crop insurance. They have adopted my methodologies for premium rate setting and reinsurance that remain in use.

⁵Farmers pay 40% of the pure premium or expected loss and no administrative or operating costs.

⁶Co-insurance is common in insurance policies to reduce moral hazard problems. Moral hazard is when the insured takes actions after the insurance policy is purchased to increase the probability or size of a loss without the insurer's knowledge.

dropped the margin coverage from 85% to 70%. The farmer-paid premium is \$4.50 for every \$1,000 of reference margin, plus a \$55 administrative fee. Given this program is whole-farm net margin based, guarantees as well as indemnities are derived ex-post using tax records. Payments are both significantly delayed and uncertain to farmers. Ker et al. (2017) notes two fundamental flaws of AgriStability: (i) unknown guarantees, indemnities, and timing of payments introduce additional uncertainty; and (ii) the whole-farm approach provides incentives for less on-farm diversification (however, most farms are mono-culture for efficiency reasons).

For illustrative purposes, consider the following AgriStability example: a farm's net margin is \$1000 and the price declines 50%, resulting in a margin decrease of \$500. AgriStability would make a payment of 70% of all losses in excess of 30%. That is, the farm would receive a payment of \$140 and must absorb the remaining \$360 loss. However, this same loss under Growing Forward would have paid the farmer \$265 and thus only \$235 would have been absorbed on the farm. In this example, the loss coverage to the farmer decreased 47% from Growing Forward to CAP. Assume the same farmer experienced a loss of \$300 rather than \$500. In this case, AgriStability would pay \$0 under CAP, but under Growing Forward it would have paid \$150. This represents a 100% decrease in coverage. So while the parameters of AgriStability did not appear to decrease dramatically, the coverage to the farmer has in fact decreased well over 50%. Moreover, farmers are more likely to experience losses in the regions where loss coverage has decreased the greatest. The stark increase in farmer dissatisfaction with the current form of AgriStability is, in my opinion, solely because of this pronounced and significant decline in loss coverage.

AgriRecovery is a program that covers catastrophic losses from natural disasters. At first glance, this program would seem most likely to cover ANY farmer loss related to COVID-19 or African Swine Fever (should it be found in Canada). However, the program is specifically designed NOT to cover market price declines or sporadic quantity interruptions. Consider the example of detecting African Swine Fever (ASF) in a particular Canadian county. AgriRecovery is designed to cover the cost of disposal of any hogs deemed necessary to eradicate. However, the presence of ASF would necessarily close the Canadian border, resulting in a significant price decline (likely upwards of 50%) for all non-eradicated hogs. Losses associated with this price decline, which would dwarf losses in the quarantined area, would NOT be covered under AgriRecovery despite being a direct result of ASF. If losses were sufficiently large, a portion would be covered under AgriStability. While this example might appear disconcerting, in times of significant political distress there tends to be more government discretion than a policy may first indicate. Moreover, this distinction may not matter as the federal government can provide ad-hoc support, if it so deemed, through additional legislation measures apart from AgriRecovery. It is worth noting that AgriRecovery is formerly triggered by an ask of the provincial government to the federal government and, in the past, not all asks have triggered the program.⁷

AgriStability and AgriInsurance were designed to be the main tenants of the risk management program. AgriInsurance is well received by Canadian farmers whereas AgriStability is not. Note that AgriInsurance is mainly for field crops whereas AgriStability is mainly for livestock operations. The inequity between the two programs creates inequity between the sectors. Moreover, the horticulture sector which faces significant product quality variability does not fit either program. Finally, there is a wide gap in risk coverage between supply managed and non-supply managed sectors.

2 Ten Random but Possibly Important BRM Questions

The purpose of this section is to outline a number of possibly important BRM questions. Apart from a few mostly surface-level considerations, government, industry, academia, and the public do not know the answers to these questions. This is rather perplexing for a program that transfers billions of dollars of public funds to farmers. Moreover, this lies in stark contrast to the U.S., where there is significant public work done on their crop insurance program by the United States Department of Agriculture's Economic Research Service, commodity groups, and academia. To a very large extent, this is a result of the United States Department of Agriculture's Risk Management Agency public sharing of insurance data. A visit to the USDA

⁷For a thorough discussion of Canadian BRM programs, see Slade (2020); Ker (2020a); Ker et al. (2017); Ker (2005).

Risk Management Agency summary of business website (<https://www.rma.usda.gov/SummaryOfBusiness>) offers the public a thousand fold more information than provincial Crown Corporations and Agriculture and Agri-Food Canada and is easily accessible.

1. *Is the “relative” production efficiency (competitiveness) of Canadian agriculture hindered/assisted by Canadian BRM programs?*

A number of questions arise from this question. How do we measure efficiency? Where do we measure efficiency (farm-level, processor-level, sector-level, provincial-level, or national-level)? How do we identify the BRM effect on the chosen efficiency measures? How do we identify the effects of foreign BRM on foreign efficiency for comparison? Are there equity considerations (by region, by commodity, by gender, by age, etc.) with respect to efficiency?

2. *Do BRM programs optimally (or at all) smooth risk?*

A number of questions arise from this question also. What does BRM smooth (farm revenue, commodity revenue, gross margin, net margin)? What should BRM smooth? Is there an optimal level of smoothing? How should smoothing be measured (one or two tailed measures; variance is very misleading)? What are the implications of smoothing for equity considerations?

3. *Do BRM programs transfer the optimal amount of public funds to farmers?*

The sitting of this committee is evident of the political strength of the farm lobby. Governments trade public funds for farm/rural votes. However, unlike in the distant past, the farm sector is now much wealthier than the average Canadian household in terms of assets and yearly income. What is the opportunity cost of these BRM transfers to some other sector (i.e. health)? Interestingly, provincially subsidized programs in Ontario and Quebec suggest too little is being transferred.

4. *Do BRM programs transfer public funds efficiently to farmers?*

A number of questions arise from this question. What are the transaction costs to farmers (time, money)? What are the transaction costs to government (fraud, moral hazard, adverse selection, deadweight loss)? What are the transaction costs to the public? What are the administrative and operating costs? How much of BRM program payments stay with the farmers or are bid into inputs such as land rental rates? What are the equity considerations here?⁸

5. *Are BRM programs decoupled?*

How do we measure the BRM effect to determine whether something is decoupled or not? Do we measure efficiency changes, smoothing, public funds transferred, public funds remaining in sector? Decoupled from what — commodity markets (supply, price levels and volatilities) or land markets? Do these questions matter in light of a weakened World Trade Organization (WTO)?

6. *Have Canadian BRM programs impacted the rate of farmer attrition?*

What is the optimal level of attrition and optimal with respect to what measure (farm efficiency, food security, sector competitiveness)? Moreover, have public funds transferred under BRM increased attrition? Have BRM safety nets slowed attrition? What are the equity considerations of BRM payments with respect to farm attrition?

7. *Does BRM treat farmers equitably?*

What BRM measure should be considered with respect to equity: money transferred, efficiency gain, lower tail production volatility? Perhaps more importantly, by what equity measure: by farm size, by province/region, by gender, by age, by commodity, and/or by farm type (mono-production versus not)? Is equity across multiple measures even possible? Should BRM programs be equitable across any specific measure? What is the level of appetite for inequality with respect to other measures? Do we include supply managed commodities which face little price risk? If we consider equity across sectors, recall that AgriInsurance is mainly for field crops whereas AgriStability is mainly for livestock operations. The inequity between

⁸For discussion, see Rude and Ker (2013) and Ker et al. (2017).

the two programs creates inequity between the sectors even if it treats each applicant identically within the program. When supply managed sectors are also included, farmer inequity with respect to risk dramatically increases.

8. How have Canadian BRM programs affected technology adoption and resulting yield distributions?

A number of questions arise from this question. Is there a wealth effect from subsidies that has increased the rate of technological adoption? Have BRM programs incentivized farmers to adopt riskier technologies? Does BRM subsidize on-farm risk reducing technologies? Has greater farm wealth increased research and development investments (private, public)?

9. Are BRM programs actuarially sound?

A number of questions arise from this question. Do moral hazard problems exist and to what extent? Do adverse selection problems exist and to what extent? Do fraud problems exist and to what extent? Is the data used to construct premium rates (yields, prices, etc.) adequate, credible, and reliable? Are the rating assumptions realistic and appropriate? Does the rating methodology reflect that BRM is a public program?

10. If not the current suite of BRM programs, then what?

A number of questions arise from this question. Should private insurance programs be considered? Should private-public programs of insurance be introduced? Should alternative or additional programs (area insurance, revenue insurance, index insurance) be considered? Should alternative programs be WTO compliant? Does WTO compliance matter anymore? Should the amount of public funds allocated to BRM change in size? Should the division of the BRM pie change amongst programs? Will any of these new programs change farmer satisfaction if no new funds are added to the program?

This section presented a number of possibly important BRM questions. Which of these, if not all, are worth serious research consideration? Apart from a few mostly surface-level considerations, the answers are unknown. This is disturbing for a program that costs billions of dollars of public funds. Most, if not all, of these questions could be answered by a fraction of 1% of one year's BRM budget.

3 Reflections on the Latest BRM Expert Review Recommendations

Over the past few years, the federal government constructed an expert review of the BRM program. The expert panel came up with seven recommendations. I discuss each below.

1. Develop and Evaluate Risk Management Tools to Cover Gaps in the Current BRM Suite

The focus of this recommendation is on coverage of shallow losses, small losses (less than 30%) not currently covered by existing programs. Options could be public, private, or a hybrid of the two. Private involvement requires a return to capital, a risk premium, administrative and operating expenses, and loading, all in addition to the pure premium (expected claim). Farmers can expect \$1 return for \$1.50 paid in premium. Furthermore, who (private insurers or government) would set the premium rates? As found in the United States, once private insurers were involved in the program, another rent seeking interest was at the table. Because of the cost of private insurance for shallow losses, farmer demand will be negligible. Farmers will choose, and are much better off, to self-insure. Moreover, farmers will not use their AgriInvest account to purchase private insurance as suggested. Governments could and should consider offering non-subsidized individual or area-level shallow loss products but covering the administrative and operating costs on a pilot basis. These would be trivial to develop and would likely be welcomed by those that are not financially secure enough to self-insure, such as new farm entrants.

2. AgriStability: Declining Participation and Satisfaction

AgriStability is complex and uncertain. However, AgriStability has always been complex and uncertain and yet participation was high under Growing Forward. Farmers are very adept at understanding farm policy and how it affects their solvency. The changes in the parameters -- decreased loss coverage -- is the

main reason for the declining participation and increasing dissatisfaction. This point is very well known by governments and farmers. I repeat the above simple example. Consider a farm's net margin is \$1000 and the price declines 50%, resulting in a margin decrease of \$500. AgriStability would make a payment of 70% of all losses in excess of 30%. That is, the farm would receive a payment of \$140 and must absorb the remaining \$360 loss. However, this same loss under Growing Forward would have paid the farmer \$265 and thus only \$235 would have been absorbed on the farm. In this example, the loss coverage to the farmer decreased 47% from Growing Forward to CAP. Assume the same farmer experienced a loss of \$300 rather than \$500. In this case, AgriStability would pay \$0 under CAP, but under Growing Forward it would have paid \$150. This represents a 100% decrease in coverage. So while the parameters of AgriStability did not appear to decrease dramatically, the coverage to the farmer has in fact decreased well over 50%. Moreover, farmers are more likely to experience losses in the regions where loss coverage has decreased the greatest. The stark increase in farmer dissatisfaction with the current form of AgriStability is, in my opinion, solely because of this pronounced and significant decline in loss coverage.

3. Examine Approaches to Improve Program Equity

This raises a number of questions. Is the program currently inequitable? Inequitable by what measure (public funds transferred, coverage, efficiency gain, safety net, reduction in lower tail volatility of yields or revenues)? Inequitable in what dimension (farm size, province/region, commodity, gender, farm type)? A unique solution does not exist for any BRM measure across multiple equity dimensions, let alone multiple BRM measures across multiple equity dimensions. The important question is whether there is a real problem to fix and, if so, at what cost to equity in other dimensions and by other measures. Increasing coverage in AgriStability and decreasing coverage in AgriInsurance while maintaining the total public funds allocated to BRM is an option that should be considered. It would equalize, to some extent, the risk management options for livestock versus field crop farmers.

4. Keep AgriInvest.

This is no surprise to anyone.

5. Modernize Premium Setting for AgriInsurance

This is long overdue. The rate setting methodology is heavily biased in favour of provincial Crown Corporations collecting excess premiums. To no surprise, the Crown Corporations have in excess of \$7.5 billion in reserves. Unless there is a change to the rating methodology, these reserves will continue to grow. Note that the largest payout in excess of premiums has been less than \$250 million in the past 25 years. That is, the reserve fund can withstand 30 consecutive years of the worst-ever payout and still have excess reserves. In other words, the probability of this level of reserves being exhausted is equivalent to winning the lottery many times in a row. The reason for these excessive reserves is the degree of asymmetric balancing and rate loading imbedded in the rating methodology. This rating methodology reflects that of a private insurer. Private actuaries struggle in premium rate setting for public crop insurance for two reasons: (i) probabilities are required to be estimated (something private actuaries have very little to no experience doing); and (ii) crop insurance is a government program, not a private program, and requires very different risk adaptation measures (measures that would not have resulted in reserves of \$7.5 billion). Quite surprisingly, Canadian farmers have never questioned the actuarial soundness of the rating methodology (in stark contrast to the U.S. farmers). Moreover, 40%, or \$3 billion, of these funds belong to the farmers and effectively represents a government takings from the farmer. I am very surprised that farmers have not launched a class action lawsuit against their respective Crown Corporation to recover their money and adjust the rate setting methodologies. What epitomizes provincial Crown Corporations acting like private insurers rather than public delivery agents is the purchasing of private reinsurance. They represent the only public entities -- *versus all other developed countries* -- that purchase private reinsurance. Last year, private reinsurance premiums were in excess of \$100 million, of which 40% was farmer paid and 36% was federally paid. Note, the Farm Credit Corporation does not purchase private reinsurance. Reinsurance premiums should not be purchased, but, if so, should fully come from provincial funds. It is doubtful whether provincial Crown Corporations have the expertise to even evaluate their reinsurance purchases. Finally, there exists a relatively costless federal reinsurance option available to the provincial Crown Corporations that has been, for the most part, ignored.

6. Improve Education on Risk Management.

This seems to me as a throw away recommendation. Farmers are very adept at understanding their risks and the government products meant to assist them in managing those risks. That is why AgriStability participation has declined in step with the dramatic declines in loss coverage. A number of questions nonetheless come to mind. To whom is the education targeted and for what insurance products? Will competing non-BRM measures be considered, such as cover crops, future markets, triple-stack seeds, etc.? Who will offer this risk management education (provincial or federal employees)? As a note of caution, a number of crop insurance education modules by agricultural extension agents were introduced 20 years ago in the U.S.; almost all of them no longer exist. As mentioned, farmers are very well aware of the risk management options available. A lack of education is not the cause of farmer dissatisfaction with AgriStability.

7. Continue Work of the Panel and Establish an Advisory Steering Committee

I have no comments on the work -- or lack thereof -- of the expert panel.

In summary, the BRM expert review panel appears to have been a political grandstanding and a weak attempt at appeasement. In my assessment, governments are willing to accommodate changes assuming those changes do not require additional public funds and are WTO compliant. The suite of programs are not likely to be improved upon, as measured by farmer satisfaction, with alternative program variants. Farmers would like more public funds allocated to BRM programs. Ironically, the \$7.5 billion in provincial Crown Corporation reserves could and should be funnelled back into the BRM programs.

4 Other Possibly Important Thoughts

In this section, I offer my thoughts on BRM issues that tend to continually surface year after year.

1. BRM and Cross-Compliance with Environmental Programs

Cross-compliance incentivizes an activity or action by the farmer via discounted premium rates. This requires that the premium rate decrease is greater than the cost of compliance *to the farmer*. If the cost to the farmer for adopting an environmental action is \$10 per acre and they are offered a \$5 per acre premium rate discount, farmers will not adopt. In almost all cases, the discount is insufficient to achieve compliance by the farmer. As a result, cross-compliance has rarely, if ever, created the desired response (see Rude and Weersink (2018) for a thorough discussion).

2. BRM and Provincial Crown Corporations

Crown Corporations in PEI, Quebec, Ontario, Manitoba, Saskatchewan, and Alberta account for 98% of insured production (AgriInsurance). In comparison to the U.S., these Crowns are relatively efficient in running their programs (have lower administrative and operating costs). However, there is a serious identity crisis within Crown Corporations; they behave more like a private insurer rather than a public program delivery agent. For example, many of the Crown Corporations spend millions of dollars per year on private reinsurance. They represent the only public entity across all developed countries that purchase private reinsurance. Private reinsurance is generally upwards of 50% more costly than self-insuring.

3. BRM and Involvement of Private Insurers

The argument for involvement of private companies in a public program is efficiency gains through elicitation of private information or efficiency gains through delivery. Neither holds true for Canadian BRM programs. Moreover, premiums from private insurers represent a pure premium PLUS a risk premium PLUS a return to capital PLUS administrative and operating expenses. Currently, Crown Corporations operate at lower expense rate than the private insurers in the U.S. crop insurance program. Also note that the public cost of involvement of private insurers in the U.S. crop insurance is almost equivalent to the farmer subsidy costs. I suspect that private insurers would represent a cost increase of 300% or more to the farmer versus strictly government subsidized multiple-peril crop insurance.

4. *BRM Subsidization*

Subsidization of farmer premium rates has been shown to cause production effects. BRM can substitute for other risk-reducing technologies at the tax payer expense. It is optimal for BRM programs to have co-insurance (currently a part of AgriStability but not AgriInsurance). Note, farm households have significantly greater income than non-farm households and four times greater assets. It is difficult to make an economic argument that the farm household should be receiving monetary transfers from the lesser well-off non-farm household.

5. *Climate Change and Solvency of AgriInsurance*

A number of plausible and less plausible climate change scenarios were simulated: steadily increasing the probability of a low yield outcome; increasing yield volatility; decreasing technological change; etc. Under the current experience-based premium rating system and the speed by which losses are incorporated into future rates, the program will trivially maintain its solvency in light of changing climate.

6. *Big Data, Artificial Intelligence, Machine Learning, and BRM*

Recovering a lot of data is becoming easier and cheaper. However, getting the right data is often difficult and costly. Moreover, the real value of data is always relative to the current information set; this is often marginal. Similarly, the promise of artificial intelligence and machine learning, which have been around for decades under different names, is often very marginal. Consider the example of using spatial location in premium rate setting for crop insurance. On the surface, it sounds like rates could be made significantly more accurate. The USDA attempted this and abandoned it, because the additional accuracy in rates was trivial and often non-existent and, therefore, not worth the cost of obtaining and maintaining the additional data. The implications of big data and artificial intelligence for BRM are trivial at best.

5 BRM and COVID-19

The COVID-19 pandemic will present many new challenges for farmers. Issues surrounding farmer sickness, farm labour and specifically out-of-country seasonal farm workers, delivery of inputs (seed, fertilizer, chicks, etc.), planting and harvesting, transportation of livestock/harvest, temporary or extended closure of processing and packing facilities, border thickening or closures, exchange rates, and, finally, changes in consumer demand all represent areas that will likely be affected by the pandemic. Managing these risks, many of which may be considered new because of their sheer magnitude, may be non-trivial.

Though CAP was designed without the possibility of a global pandemic in mind, it would not necessarily have been efficient to do so. Governments always have the option to deal with Black Swan events in real-time as they arise. This is almost always more efficient, as Black Swan events cannot be predicted as to their specific form nor their timing. So, while it is necessary and important to ask where the gaps may be in our current BRM policy with respect to issues related to COVID-19, the presence of gaps should not necessarily be an indictment. Furthermore, any shortcomings as they relate to the COVID-19 pandemic, while informative, should not in themselves warrant BRM policy changes.

A natural and important question to consider is whether BRM programs can withstand a barrage of economic hits that may (or may not) be forthcoming over the next six months. AgriInvest is a direct payment program, and there is no reason why the number of farmers applying for it will change dramatically this year. Concomitantly, there is no reason to expect farmer AgriInvest deposits not to be matched by the federal government in accordance with the provisions of the policy. AgriInsurance payments are triggered by yield losses, which are dominated by weather events. There is no reason to expect weather to trigger more or less payments this year versus other years. Moreover, Crown Corporations hold in excess of \$7.5 billion in reserves. There are currently enough reserves to pay thirty consecutive years of the largest-ever payout. Clearly, AgriInsurance is solvent. We may see increased sign-up in AgriStability due to much greater uncertainty. However, unless the border closes, I do not expect to see price changes sufficient to trigger mass AgriStability claims. Nonetheless, should AgriStability participation dramatically increase and the borders thicken or close, causing significant declines in Canadian prices, AgriStability could experience a consid-

erable increase in the number of claims. However, AgriStability is funded by the government, and, given the \$82 billion economic stimulus package announced on March 17, 2020, it is exceedingly likely that the program will have access to any necessary funds, no matter how considerable the total claims are. Likewise, AgriRecovery, funded through the federal government, if triggered, will not face any resistance in securing funds from the finance department or opposition parties. In summary, the ability of the BRM programs to make farmer payments in accordance with their provisions is a non-issue.

Another natural and important consideration is whether the farm sector in general has the ability to self-insure against shallow losses arising from COVID-19 for which they will not receive payments under BRM programs. If we compare the ratio of the average farm household income to the average household income, the farm household is in a better position to self-insure than many non-farm households. More importantly, if we compare the net worth of farm to non-farm households in Canada, that ratio was roughly 2 in 1999 and has risen above 4 by 2016. These ratios are certainly skewed upwards because of the supply managed sector, which is unlikely to experience any price risk and thus has no need to self-insure as a result of COVID-19. Another ability to self-insure is access to, and cost of, capital. Currently, there is no evidence of liquidity or credit constraints for farms at this time. The cost of capital is very low; the Bank of Canada announced a rate of 0.25% on March 27, 2020. Summarizing, the farm sector is in a relatively good position to self-insure against any shallow loss that may occur as a result of COVID-19.⁹

6 Summary

Very little has structurally changed in BRM programs over the past three decades. This is not an indictment of the BRM program. A cursory look at agricultural trade numbers clearly suggests that Canadian farmers are competitive internationally in almost all products. Canada continually exports in excess of 50% of the agricultural products produced. BRM programs have not hindered the competitive position of Canadian farmers. Moreover, farm households have significantly greater income than non-farm households and four times greater assets. It is difficult to make an economic argument that the farm household should be receiving more monetary transfers from the lesser well-off non-farm household. I do not believe that the BRM program can be fixed to the satisfaction of farm groups by different variants of insurance programs. Farmers want more public funds allocated to BRM programs. The BRM expert panel review added no new information or insights and there is no evidence that its existence has increased farmer satisfaction with respect to BRM programming.

AgriStability, presumably the main cause of this call for submission of briefs, could be made less complex by replacing it with a regional, commodity-specific, gross margin or gross revenue program. WTO compliance is less of an issue now and, moreover, other developed countries (i.e. United States) have similar programs. The stark increase in farmer dissatisfaction with the current form of AgriStability is, in my opinion, solely because of the pronounced and significant decline in loss coverage. Governments could certainly decrease coverage or subsidies in AgriInsurance while increasing coverage in AgriStability without increasing total public funds allocated to BRM. Furthermore, governments could and should consider offering pilot non-subsidized individual or area-level shallow loss products while covering the administrative and operating costs. These would be trivial to develop and would likely be welcomed by those that are not financially secure enough to self-insure, such as new farm entrants.

The current AgriInsurance rate setting methodology is heavily biased in favour of provincial Crown Corporations collecting excess premiums. The Crown Corporations have in excess of \$7.5 billion in reserves and, unless there is a change to the rating methodology, these reserves will continue to grow. The reserve funds can withstand 30 consecutive years of the worst-ever payout and still have excess reserves. Surprisingly, Canadian farmers have never questioned the actuarial soundness of the rating methodology. Note, \$3 billion of these funds belong to the farmers. I am surprised that farmers have not launched a class action lawsuit against their respective Crown Corporations to recover their money and adjust the rate setting methodologies. Furthermore, despite these excessive reserves, provincial Crown Corporations still purchase private

⁹For further discussion of BRM and COVID-19, see Ker (2020b).

reinsurance. They represent the only public entities -- *versus all other governments in developed countries* -- that purchase private reinsurance. Last year, private reinsurance premiums were in excess of \$100 million, of which 40% was farmer paid and 36% was federally paid. Interestingly, there exists a relatively costless federal reinsurance option available to the provincial Crown Corporations that has been, for the most part, ignored.

A number of possibly important questions were raised throughout this brief. Apart from some surface-level considerations, government, industry, academia, and the public do not know the answers to these questions. For a program that transfers billions of dollars of public funds to farmers, this situation is disconcerting. A fraction of a single percent of those funds could answer many, if not all, of these relevant questions.

Finally, the COVID-19 pandemic is a Black Swan event. Governments have the option to deal with Black Swan events in real-time as they arise. This is almost always more efficient, as Black Swan events cannot be predicted as to their specific form, their timing, or the most appropriate policy response. As a result, I would suggest treading carefully in making structural BRM policy changes at this time in response to COVID-19. The solvency of the BRM programs does not appear to be in question because of COVID-19.

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