

Comment on the Organic Livestock and Poultry Practices Economic Analysis (Ferrier Report)¹

85 Fed. Reg. 22664-22677 (April 23, 2020)

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Introduction

My prior analysis of the Withdrawal RIA concluded it was substandard in many identifiable ways. *See* ECF No. 98-3 (Vukina Declaration) and 98-4 ("the Vukina Report") (Attachment A hereto) I pointed out that the spreadsheets published in support of the Withdrawal RIA contained computational results that could not be replicated using the published formulas. Worse, the computational values appearing in the spreadsheets could not be replicated by in any consistent manner by slight adjustments to the formula or the published values. *Id.* Thus, many of the published spreadsheets appeared to be flawed, each in their own way. Stated plainly the published analysis was incomprehensible.

The Ferrier Report confirmed my findings. 85 Fed. Reg. at 22665 ("Summary"); *see also* Sections 1-3. The Ferrier Report goes on however to identify additional errors in the Withdrawal RIA that could not possibly have been identified before because of inadequate documentation and non-disclosure of USDA's underlying assumptions and methodology.² *See* Sections 4-7; *see e.g.* 85 Fed. Reg. at 22664 ("This Report identifies four additional categories of errors [in the] Withdrawal RIA.) In fact, the Ferrier Report repeatedly recognizes that not only was a third-party unable to replicate the Withdrawal RIA analysis, but even a USDA employee with access to all of the work product that underpinned the publication of the Withdrawal RIA could not fully explain the methodology or the results. *See e.g.* 85 Fed. Reg. at 22669 ("This Report cannot explain the discrepancy in values.")

USDA stated the Ferrier Report is an "independent perspective on the integrity of the methodology and calculations underlying the prior rulemakings." 85 Fed. Reg. at 22665. However, as set forth below the Ferrier Report did not comprehensively review the costs and benefits of the "prior rulemakings." Moreover, the uniformity of the conclusions (that the costs of the OLPP were understated and the benefits overstated) and the proposed methodological revisions (that lower estimated benefits and increase costs) indicates less than an "independent perspective."

¹ "Economic Analysis Report: Peer Review of Regulatory Impact Analysis for the Organic Livestock and Poultry Production Practices Rule and the Withdrawal Rule." 85 Fed. Reg. 22624-77 (April 23, 2020) ("the Ferrier Report").

² The Ferrier Report details many demonstrable errors in the Withdrawal RIA. It goes to great lengths to conclude that some of the claimed errors originated in the OLPP RIA analysis. *See* 85 Fed. Reg. at 22665 ("Summary") The source of the errors in the Withdrawal RIA is irrelevant—the sole question posed by the Federal Register Notice is the "impact on the Withdrawal Rule." 85 Fed. Reg. at 22664. In economics a computational error may or may not be material, it depends primarily on the role the calculation plays in the targeted assessment.

Given the time constraints imposed by the Department it was not possible to fully respond to the Ferrier Report, or raise a rebuttal to each suggestion of material methodological error or provide an improved analysis or suggest a sounder methodological approach in each circumstance. Taken in this light, and as a matter of public accounting under the preferred federal framework for developing cost-benefit analyses, the Ferrier Report does not provide a fully comprehensible standard against which to measure the costs and benefits of the chosen regulatory course of action, in this case the withdrawal of the OLPP. *See e.g.* OMB Circular A-4; *see also* Executive Orders 12866 and 13563.

Nonetheless, certain errors are identifiable and if the Ferrier Report is corrected in accordance with the following analysis, it is inescapably obvious that the quantifiable benefits of the OLPP easily exceed the quantifiable costs, even without consideration of the many benefits described in the OLPP RIA that were not directly monetized and that the Ferrier Report ignored. Thus, the question of the impact on the proposed withdrawal of the OLPP based on the additional errors in the Withdrawal RIA uncovered in the Ferrier Report is clear: withdrawal is not substantiated by the Ferrier Report just as it was not substantiated by the Withdrawal RIA.

Preliminary Observations Regarding the Ferrier Report

The Ferrier Report Did Not Conduct a Comprehensive Review of the OLPP RIA and Withdrawal RIA and did not Conduct a Cost-Benefit Analysis

The OLPP RIA described numerous benefits of the OLPP that are not addressed in the Ferrier Report. *See e.g.* OLPP RIA at p. 5; *Id.* at 9-10; *Id.* at 11-16 (“Need for the Rule”); *Id.* at 88-98 (“Benefits of the Final Rule”) Many other sections of OLPP RIA describes benefits not addressed by the Ferrier Report. The failure to address all the proposed benefits of the OLPP renders the Ferrier Report more of an expansion of the catalogue of USDA’s admitted methodological and computational errors than a positive or conclusive revisiting of the two rulemakings as USDA suggested. *See* 85 Fed. Reg. at 22665 (stating Ferrier Report is an “independent perspective on the integrity of the methodology and calculations underlying the prior rulemakings.”)

The Ferrier Report first focuses on errors addressed, if incompletely, in the Withdrawal RIA. *Id.* at Sections 1-3. Then it selectively reassesses portions of the OLPP RIA that were not considered at all in the Withdrawal RIA. *Id.* at Sections 4-7. But no final calculations are set forth. Because the Ferrier Report contains no final calculations to review, it is impossible to coherently compare it to the OLPP RIA or the Withdrawal RIA, which contained such calculations. As this is described by USDA as its “initial analysis” it appears that the final calculations have been withheld and when published will require another round of public comment to assess the full impact of the Ferrier Report on the proposed course of regulatory action. 85 Fed. Reg. at 22664 (proposing to publish a “final analysis”)

Review of Section Two of the Ferrier Report

The Ferrier Report Failed to Correct the Computational Methodology Error in the Withdrawal RIA Regarding Willingness to Pay (“WTP”) and Miscalculates the Future Benefits Arising from the OLPP³

The OLPP RIA concluded consumers would be willing to pay more for eggs produced under the practices required under the OLPP. To compute the benefit of consumers’ willingness to pay (“WTP”) for eggs following the implementation of the OLPP, the OLPP RIA relied primarily on a single academic study.⁴ (hereinafter “Heng” or “Heng paper”). The Ferrier Report claims the OLPP RIA derived an “inappropriate estimate for the value of eggs produced” from the Heng paper and that this error was properly corrected in the Withdrawal RIA. *See* 85 Fed. Reg. at 22667. A review of the Heng paper demonstrates the Ferrier Report’s conclusion is incorrect.

The Heng paper concluded:

Our estimates suggest that the majority of consumers are willing to pay an average premium of \$0.21 to \$0.49 per dozen for eggs produced in a cage-free environment with outdoor access or without induced molting. Heng, at 431.

The Ferrier Report focused on a separate statement in the Heng paper that isolated the WTP for “outdoor access”:

[W]ere willing to pay a premium for eggs from hens given outdoor access...with a mean premium of \$0.25 * * * [and a second group of respondents would pay a] mean premium for outdoor accessat \$0.16.” 85 Fed. Reg. at 22667.

Citing this conclusion, the Ferrier Report concluded the appropriate WTP low should be \$0.16 and the high \$0.25. 85 Fed. Reg. at 22667 The Ferrier Report explained the WTP used in the OLPP RIA of \$0.21-- \$0.49 was too high because:

[U]nder existing rules, organic eggs are already required to be produced cage-free” * * [and] the actual benefit attributable to the OLPP Rule should be comprised of only the portion of the WTP” [that can be] ascribed to the addition of new outdoor access requirements to existing organic egg production requirements. 85 Fed. Reg. at 22667.

The flaw in the foregoing statement is that it overlooks the impact of banning forced or induced molting on the WTP of the survey respondents. In fact, the Ferrier Report completely erased the

³ All numerical WTP values refer to payment for a dozen eggs.

⁴ *See* Yan Heng, Hikaru Hanawa Peterson and Xianghong Li (2013): *Consumer Attitudes toward Farm-Animal Welfare: The Case of Laying Hens*. Journal of Agricultural and Resource Economics 38(3): 418-434

significant effect on WTP that the Heng study described.⁵ This oversight is material because it cancelled the effect on consumers' WTP of the OLPP's *new prohibition* on forced molting. Prior to the OLPP no direct prohibition on "forced molting" existed in the organic regulations. This is why the OLPP *added* the prohibition. "AMS added a new § 205.238(c)(10) that prohibits the practice of forced molting in poultry." 82 Fed. Reg. at 7051; *see also* 82 Fed. Reg. at 7090 (§ 205.238(c)(10) ("An organic livestock operation must not: ...Practice forced molting or withdrawal of feed to induce molting.))

The erroneous omission of the "forced molting" prohibition in the OLPP from the computation misstated the WTP benefit attributable to the OLPP. Close examination of the WTP results in Heng's Table 8 discloses the authors separately calculated the mean WTP for the four salient welfare-related attributes, (1) cage free; (2) outdoor access; (3) stocking density and (4) no forced molting.⁶ They then tabulated the results by group.

For the first group the WTP for "outdoor access" was \$0.16 and for the second group it was \$0.25. Heng, at 429. For the first group the WTP for "no forced molting" was \$0.40 and for the second it was \$0.35. *Id.* Accordingly, the correct total WTP benefits associated with the OLPP is the sum of the mean premia for "outdoor access" and "no forced molting." Thus, the incontrovertible and actual WTP benefit range is \$0.56--\$0.60. *Id.*

The Ferrier Report mistakenly concluded that "outdoor access" was the sole benefit of the OLPP and found the WTP range should be solely based on that welfare attribute. The "no forced molting" attribute was entirely and erroneously overlooked. Thus, the approach taken in the Ferrier Report, from a methodological perspective, missed 50% of the relevant data in Table 8 and misstated the WTP by an even greater percentage.⁷ If the correct WTP is plugged into the undisputed benefits calculation formula, the benefits of the OLPP manifestly exceed the costs.

The Ferrier Report Overlooked Recent Literature that Supports the OLPP RIA WTP Findings

Related to benefit transfer exercise discussed above, it is also surprising that Ferrier Report failed to examine contemporaneous and newer peer reviewed literature in the field of animal welfare economics to attempt to verify or improve the precision of benefit estimates that were used to conduct the cost-benefit analysis in the Withdrawal RIA. *See* OMB Circular A-4, at 17 (peer reviewed analysis should be relied upon) As is shown below, this misstep renders the

⁵ Heng found consumers' interest in avoiding "induced molting" was "notable" and a majority of the survey respondents viewed such "conventional management practices" as adverse to a birds' welfare. Heng, at 431. "More than 95% of respondents were willing to pay a premium for eggs from hens that were not forced into molting." *Id.* at 430. Heng also concluded that 85% of the survey respondents were willing to pay a premium for "outdoor access, cage free housing, and non-induced molting." *Id.* at 431.

⁶ Heng segregated the survey respondents into two nearly equal groups that differed solely by certain information they received that was not directly related to animal welfare practices and for reasons that are not material here.

⁷ The foregoing analysis is unaffected by the discussion in the section of the Ferrier Report styled "Weighting of WTP Values." In fact, the key conclusion supports my analysis: "This Report assesses the mean premium as the more appropriate value to apply for rulemakings purposes." 85 Fed. Reg. at 22676.

Withdrawal RIA and the Ferrier Report even further out of step with demonstrated WTP values in this setting.

In a highly regarded and cited text entitled “Compassion, by the Pound: The Economics of Farm Animal Welfare⁸” the authors present WTP premium estimates for eggs of various production systems relative to eggs from cage systems based on a hypothetical auction. *See Id.* at 284 (Table 9.2). Directly relevant for evaluating benefits of the OLPP is the comparison of the WTP for cage-free eggs in an aviary system and the cage-free eggs in an aviary system with outdoor access or free-range. The two production systems are identical in all material aspects (density, beak trimming, room for scratching and dust bathing, nest availability, flock size and the type of feed) *except* for outdoor access. *See Id.* at 272 (Table 9.1) Therefore, the difference in the WTP is solely attributable to outdoor access or free range. The results show that the presence of the outdoor access or free-range aspect raised the average WTP by \$0.59 per dozen eggs.

Another highly probative study should be considered. In 2017 two Dutch economists published “Dutch Consumers’ Willingness to Pay for Broiler Welfare.”⁹ The authors estimated the Dutch consumers WTP for broiler welfare using discrete choice experiment and a random parameters logit model. Their results show the mean WTP estimate for outdoor access of 2.145 Euro (\$2.73) per 500 grams (1.1 pound) of chicken meat. Contrasting this result with the price of regular chicken of \$2.55 per 500 grams, the outdoor access premium amounted to 107.25%.

The Ferrier Report Overlooked Recent Literature that Supports the OLPP RIA Consumer Trust Benefit Findings

Two other peer reviewed studies should be considered because they highlight the importance of consumer trust when it comes to credence attributes claim verification.

In a 2010 study entitled, “Consumer Willingness to Pay for Livestock Credence Attribute Claim Verification” the authors estimated the WTP for pasture for milk cows and pigs.¹⁰ Relying on random parameters logit estimation method and direct questioning protocol (asking survey respondents to select their own preferred alternative) they estimated WTP for pasture access in case of pork chops (in \$/pound) in four verification scenarios. The authors found a WTP of 1.22 where the claim was self-verified by the producer; -1.29 (negative) where the claim was private-party verified; 1.33 where the claim was consumer-group verified and 3.84 in the case of USDA verified pasture access (organic). In the case of milk, the estimated WTP for pasture access (in \$/gallon) was 4.03 for self-verified pasture access; 1.24 for private party verification; 6.12 for consumer group verification; and 10.32 for USDA-verified pasture access (organic). For both pork chops and milk, the results clearly indicate that consumers have the highest trust in government verification of the credence attribute claims related to animal welfare.

⁸ *See* F. Bailey Norwood and Jason L. Lusk: “Compassion, by the Pound: The Economics of Farm Animal Welfare.” Oxford University Press, New York (2011).

⁹ *See* Machiel Mulder and Sigourney Zomer (2017): “Dutch Consumers’ Willingness to Pay for Broiler Welfare.” Journal of Applied Animal Welfare Science, Vol. 20 (n0.2): 137-154.

¹⁰ *See* Nicole J. Olynk, Glynn T. Tonsor and Christopher A. Wolf (2010): “Consumer Willingness to Pay for Livestock Credence Attribute Claim Verification.” Journal of Agricultural and Resource Economics 35(2): 261-280.

Given that the average offered prices in the experiment in both cases were \$4 per a pound of boneless pork chops or per gallon of milk, the animal outdoor access WTP premium substantiated by USDA verification amounted to 96% for pork chops and 258% in case of milk.

In a 2019 study entitled, “Willingness to Pay for Whole Turkey Attributes during Thanksgiving Holiday Shopping in the United States” the authors estimated the WTP for outdoor access (free range) for turkeys during Thanksgiving holiday shopping season in the U.S.¹¹ Similar to the Olynk study results, this study also found that the consumers trust the USDA certification process the most. The WTP for USDA certified free-range turkeys was \$0.74/pound, for retailer certified free-range turkeys \$0.64 and for the industry certified free-range it was \$0.37/pound. As a percentage of the mean base price, these WTP measures amount to 47% premium for USDA certified free range, 41% for the retailer certified outdoor access and 24% for the industry certified outdoor access. In summary, a rather exhaustive survey of extant literature in the field of WTP for outdoor access of farm animals clearly indicates much higher levels of WTP than used in the Withdrawal RIA.

Review of Section Four of the Ferrier Report

In Section 4(A) the Ferrier Report concluded two baseline egg production values were cited in the OLPP RIA and the different values appeared “without explanation.” 85 Fed. Reg. at 22669. It also concluded the Withdrawal RIA used a third and different baseline production value. 85 Fed. Reg. at 22669. The production value cited by the Ferrier Report from the Withdrawal RIA was 24.7708 dozen eggs per bird per year. The production value from the OLPP RIA was not cited. Instead the Ferrier Report calculated a value based on the number of laying hens reported in November 2016 and the highest number of eggs produced from an undisclosed month between April 2016 and January 2017, which was reported as 23.0406.

In Section 4(B) the Ferrier Report proposed to address the inconsistencies by selecting a single baseline production value. Absent intervening reasons, this is a sound methodological approach. OMB Circular A-4 at p. 15¹² It is also widely understood that “the choice of a baseline will significantly affect estimated benefits and costs.” *Id.* Thus, the impact of altering the baseline must be carefully scrutinized to ensure it is not merely a means of preselecting an outcome. The Ferrier Report rejected the baseline values appearing in *both* prior rulemakings, 85 Fed. Reg. at 22669, and concluded the Withdrawal RIA’s 24.7708 dozen eggs per layer was too high because upon further review of statistical sources the correct laying rate should have been 23.0406 dozen. *Id.* Applying this result would alter the OLPP benefits calculation downward by approximately 7%.

¹¹ See Coutney L. Bir, N.J. Olynk Widmar, Melissa K. Davis, Marisa A. Erasmus and Stacy Zuelly (2020): “Willingness to pay for whole turkey attributes during Thanksgiving holiday shopping in the United States.” Poultry Science, <https://doi.org/10.1016/j.psj.201912.047>.

¹² Here however the Ferrier Report overlooked that the OLPP RIA recognized and assessed multiple sources for determining the baseline egg production value. See OLPP RIA, at pgs. 66-69 (describing more than eight sources of information reviewed prior to estimating a baseline production value.)

This approach is flawed for at least two reasons. First, the utilized data has been reported in the secondary literature to be considered among the least reliable of all AMS market reports. *See e.g. Lusk, Jayson, From Farm Income to Food Consumption: Valuing USDA Data Products, Prepared by: Council on Food, Agriculture and Resource Economics (C-Fare) (2003) at p. 18.* When the reliability of the data is questionable it is mere surmise to conclude that one number is better than the other. For example, the laying rate of 23.0406 computed in the Ferrier Report based on the Weekly USDA Certified Organic Poultry and Egg for April 2016 is identical (up to 2 decimal points) to the one found in the same report 4 years later (April 27, 2020). The likelihood that the laying rate was unaltered during a 4-year period is virtually zero. This strongly signals this data is in fact not observed but is determined or constructed using prespecified and undisclosed formulas. *See OMB Circular A-4, at 17 (peer reviewed analysis should be relied upon)*

Despite the restricted time frame provided, I am able to share current data that best reflects baseline production values for organic eggs. Within the short 30-day period allotted, the Organic Trade Association collected data from certified organic poultry operations that maintain production information as part of their routinely maintained business records. This data accounts for 5.62 million birds as an observed sample. The records were collected between May 11 and May 20 and represent farms across all geographic regions including the Northeast, Mid-Atlantic, Midwest, and West Coast. The reporting farms are currently compliant with the OLPP and all farms reporting outdoor access in excess of the OLPP requirement of 2 sq. ft/bird. The results show an average of 24.689 dozen eggs per laying hen per year. This weighted value is very close to the number originally used in the OLPP RIA indicating the production values used in the OLPP RIA are more accurate than the less reliable replacement numbers used in the Ferrier Report. Reducing the estimated number of eggs produced by 7.51%, as proposed in the Ferrier Report, is inconsistent with the best available evidence. I submit these figures as recent reliable data on baseline production values for organic eggs to update the record for USDA to rely on.

In Section 4H Ferrier Report argues that the general specification in Scenario B in the Final RIA is not well-justified. I believe that Scenario B should be modified to assume that 50% of the organic industry that can adapt to the new rules should continue to grow at 12.7% average annual growth rate whereas the second half of the industry that cannot adapt should continue producing organic eggs for 5 years of the transition period at the constant 2017 production level and should exit the organic sector in 2022 and move to cage-free market. What is missing in the Ferrier Report's modification of Scenario B is that 50% benefits eligibility rule for outdoor access argument should apply only to organic eggs produced by incumbents. However, the new growth in organic production during the entire period under consideration (i.e. all eggs and not only half of them) should generate benefits of the regulation due to outdoor access and no forced molting because these eggs are the result of new entry and were not there in 2017.

Review of Section Six of the Ferrier Report

In Section 6 the Ferrier Report argues that the OLPP RIA used production levels that did not account for increased mortality when calculating benefits. The Ferrier Report estimates the benefit calculation was over-estimated by 1.4%. 85 Fed. Reg. at 22673 Having squarely placed the question of increased mortality arising from outdoor access at issue, it was deficient to fail to

consider more recent literature on the subject. Based on such a review I conclude the projected increase in hens' mortality resulting from outdoor access is more than likely inaccurate.

A detailed review of extant literature reveals that the mortality rates vary dramatically from study to study because free range and organic production systems with unrestricted outdoor access are very complex. Almost each farm has a unique combination of location, weather, breed, feed, and management during rearing and laying periods. Because of this complexity, controlled experiments with outdoor systems on experiment stations are difficult to scale up to field situations and the results do not map precisely from one system to the next. In 2014 a discussion paper entitled "Laying hen performance in different production systems; why do they differ and how to close the gap?"¹³ presented a unique set of result. The authors present a comparison of various production indicators (egg production, feed conversion and mortality) across different production systems (cage, barn, free range and organic) over time. Both free-range and organic systems have identical access to a pasture of 4 m² per bird whereas the other two systems confine birds strictly to indoors. The results show significant decline in mortality rates over time for both free-range and organic systems and virtually no improvements over time with barn and cage systems. This strongly suggests a static (fixed) value for mortality rates, particularly when computing benefits of the system, is unwarranted.

For example, the literature demonstrates, mortality rates in 2008/2009 were 15.4% in organic production, 11.9% in free-range, 11.2% in barn and 9.2% in cage systems. In 2010/2011, the mortality in organic systems was 13.1%, in free-range 11.6%, in barns 8.8% and in cages 10.2%. However, by 2012/2013 the mortality rate in organic production systems dropped to 7.9% and was the lowest across all four systems, compared to 9.7% in free-range, 9.0% in barns and 8.8% in cage systems. Based on these results and the nature of the OLPP regulatory proposal, I believe the research compels the use of a zero excess mortality attributable to outdoor access because even if, currently, there is some degree of excess mortality due to outdoor access, by the time this regulation is fully implemented, technological and management advances are likely to eliminate the existing differences. This approach comports more closely to the OMB Circular A-4, that directs baseline values be carefully vetted to ensure "changes in external factors affecting benefits and costs" are recognized. *See Id.* at p. 15

In addition, actual data gathered during the 30-day comment period comports with the literature cited above. The previously mentioned Organic Trade Association survey data shows a present weighted average of 6.07% mortality rate for certified organic poultry operations.

Review of Section Seven of the Ferrier Report

Section 7 of the Ferrier Report purports to uncover various errors in the cost calculations appearing in the OLPP RIA that were uncorrected or completely ignored in the Withdrawal RIA. The discussion presents a thicket of explanations that are very difficult to follow and that cannot

¹³ Ferry Leenstra, Veronika Mauerer, Fabien Galea, Monique Bestman, Zivile Amsler-Kepalaite, Jeroen Visscher, Izak Vermeij and Marinus van Krimpen (2014): "Laying hen performance in different production systems; why do they differ and how to close the gap? Results of discussions with groups of farmers in The Netherlands, Switzerland and France, benchmarking and model calculations." European Poultry Science, Vol. 78, ISSN 1612-9199. DOI: 10.1399/eps.2014.53.

be independently verified without access to the original and corrected calculations.¹⁴ But two problems are easily detectable. First, throughout the OLPP RIA the cost burden of compliance with the OLPP has two components— increased physical cost and reduced revenue. Based on this methodology both categories of costs are meaningful for producers that are assumed to stay in the industry after implementation of the OLPP and should be accounted for. By contrast, for producers who exit the industry, the physical costs of compliance with the OLPP are obviously zero. On the other hand, the “cost” attributable to their reduced revenue should not be calculated as the number of eggs that operation produced before exiting the industry multiplied by the break-even organic price before the OLPP as suggested by the Ferrier Report, because by leaving the industry they will deploy their production resources in their next best alternative and will earn revenue/profits based on that alternative activity. *See* Ferrier Report at 22674; *compare* OLPP RIA, p. 106 (“In the case where aviaries are not able to acquire additional land, AMS assumes that these operations will move to the cage-free market because this would be a lower cost option than reducing the number of birds to comply with the outdoor stocking density and remain in the organic market.”) Conventional analysis suggests the only increase in costs that should be allowed for producers exiting the industry is the difference in profit obtained in the organic egg marketplace compared to their next best alternative. Secondly, some partial equilibrium adjustments may be necessary to reflect the supply change induced differences in the price of organic eggs relative to cage-free eggs in the post-OLPP marketplace.

¹⁴ The Ferrier Report at 22674 refers to calculations completed on “internal spreadsheets” that were not published. Without access to the same data and live spreadsheets as the Department’s analyst, reviewers of this work are unable to replicate or test the results.