**Appendix**

**Table A1.** Estimates of demand for conventional and cage-free eggs, including month fixed effects estimates

|  |  |
| --- | --- |
|  | **Coef. (std. error)** |
| **Parameter** | **Conventional****Egg Demand**$log⁡(Q\_{C})$ | **Cage-free****Egg Demand** $log⁡(Q\_{CF})$ |
| Conventional Egg Price, $log⁡(P\_{C})$ | -0.321\*\*\*(0.058) | 0.682\*\*\*(0.149) |
| Cage-free Egg Price, $log⁡(P\_{CF})$ | 0.307\*(0.176) | -1.065\*\*(0.455) |
| Log of Employment Rate | 1.374\*\*(0.661) | -5.560\*\*\*(1.708) |
| COVID | 0.274\*\*\*(0.097) | -0.405(0.250) |
| January vs. December | -0.069(0.085) | -0.009(0.220) |
| February vs. December | -0.149\*(0.084) | -0.163(0.216) |
| March vs. December | -0.018(0.085) | -0.097(0.221) |
| April vs. December | -0.088(0.085) | -0.164(0.220) |
| May vs. December | -0.207\*\*(0.086) | 0.130(0.223) |
| June vs. December | -0.257\*\*\*(0.087) | 0.031(0.224) |
| July vs. December | -0.108(0.086) | -0.065(0.221) |
| August vs. December | -0.097(0.085) | -0.058(0.220) |
| September vs. December | -0.128(0.084) | -0.025(0.216) |
| October vs. December | -0.078(0.088) | 0.023(0.227) |
| November vs. December | 0.011(0.087) | -0.101(0.226) |
| Constant | 2.520(2.709) | 30.590\*(7.002) |
| **N** | **69** | **69** |
| R2 | 0.538 | 0.420 |
| Notes: Superscripts \*\*\*, \*\*, and \* denote statistical significance at the one, five, and ten percent levels, respectively.  |

**Table A2.** Estimates of supply for conventional and cage-free eggs with month fixed effects and time trend estimates

|  |  |
| --- | --- |
|  | **Coef. (std. error)** |
| **Variable** | **Conventional****Egg Supply** $log⁡(Q\_{C})$ | **Cage-free****Egg Supply**$$log⁡(Q\_{CF})$$ |
| Conventional Egg Price, $log⁡(P\_{C})$ | 0.015(0.012) | --- |
| Cage-free Egg Price, $log⁡(P\_{CF})$ | --- | 0.098\*\*(0.045) |
| Log Feed Price | -0.076(0.055) | -0.062(0.054) |
| January vs. December | -0.027(0.020) | -0.065\*\*(0.024) |
| February vs. December | -0.114\*\*\*(0.019) | -0.152\*\*\*(0.023) |
| March vs. December | 0.094\*\*\*(0.021) | 0.043\*(0.024) |
| April vs. December | -0.058\*\*\*(0.020) | -0.050\*\*(0.024) |
| May vs. December | 0.003(0.021) | -0.017(0.025) |
| June vs. December | -0.078\*\*\*(0.021) | -0.072\*\*\*(0.026) |
| July vs. December | 0.060\*\*(0.023) | -0.023(0.025) |
| August vs. December | -0.015(0.020) | -0.020(0.024) |
| September vs. December | -0.045\*\*(0.020) | -0.072\*\*\*(0.024) |
| October vs. December | 0.030(0.022) | -0.023(0.024) |
| November vs. December | 0.019(0.020) | -0.094\*\*\*(0.024) |
| Time trend | -0.001(0.000) | 0.007\*\*\*(0.002) |
| Cumulative Bird Flu Cases | -0.000(0.001) | -0.002\*\*(0.001) |
| $$log⁡(Q\_{C,t-1})$$ | 0.924\*\*\*(0.096) | --- |
| $$log⁡(Q\_{CF,t-1})$$ | --- | 0.695\*\*\*(0.084) |
| Constant | 0.496(0.754) | 1.831\*\*\*(0.504) |
| **N** | **69** | **69** |
| R2 | 0.976 | 0.993 |
| Notes: Superscripts \*\*\*, \*\*, and \* denote statistical significance at the one, five, and ten percent levels, respectively.  |

**Table A3.** Summary of key elasticity measures and the justification for their use

|  |  |  |
| --- | --- | --- |
| **Variable** | **Estimate** | **Source or reasoning** |
| *Demand elasticities* |  |  |
| Conventional own-price  | -0.321 | Regression analysis |
| Conventional cross-price  | 0.307 | Regression analysis |
| Cage-free own-price  | -1.065 | Regression analysis |
| Cage-free cross-price  | 0.682 | Regression analysis |
| *Supply elasticities* |  |  |
| Short-run conventional own-price  | 0.192 | Regression analysis |
| Short-run cage-free own-price | 0.322 | Regression analysis |
| Long-run conventional and cage-free own-price (Case 1, Year 10) | 0.940 | Bakhtavoryan et al. (2021), *JAAE* |
| Long-run conventional and cage-free own-price (Case 2, Year 10) | 1.880 | Testing the sensitivity of results with a more elastic long-run supply curve |

**Table A4.** Sensitivity of net present value (NPV) estimates from disaggregated egg market modeling under different assumptions of the discount rate

|  |  |
| --- | --- |
|  | **Assumed discount rate** |
| **NPV outcome (in millions)** | **0.025** | **0.05** | **0.075** | **0.10** |
| Assume $ϵ\_{LR}=0.94$ |  |  |  |  |
| Revenue value equivalent (ΔPS) | -$144.0 | -$130.6 | -$119.0 | -$109.0 |
| Producer profit equivalent (Δ spending) | +$214.2 | +$193.6 | +$175.8 | +$160.4 |
| Assume $ϵ\_{LR}=1.88$ |  |  |  |  |
| Revenue value equivalent (ΔPS) | -$68.0 | -$64.9 | -$61.8 | -$58.8 |
| Producer profit equivalent (Δ spending) | +$99.5 | +$95.8 | +$91.8 | +$87.9 |
| Note: The calculations follow the procedures outlined in Table 4, where the only distinction across columns is the discount rate applied in calculating the NPV for each hypothetical case and different long-run elasticity assumptions. |