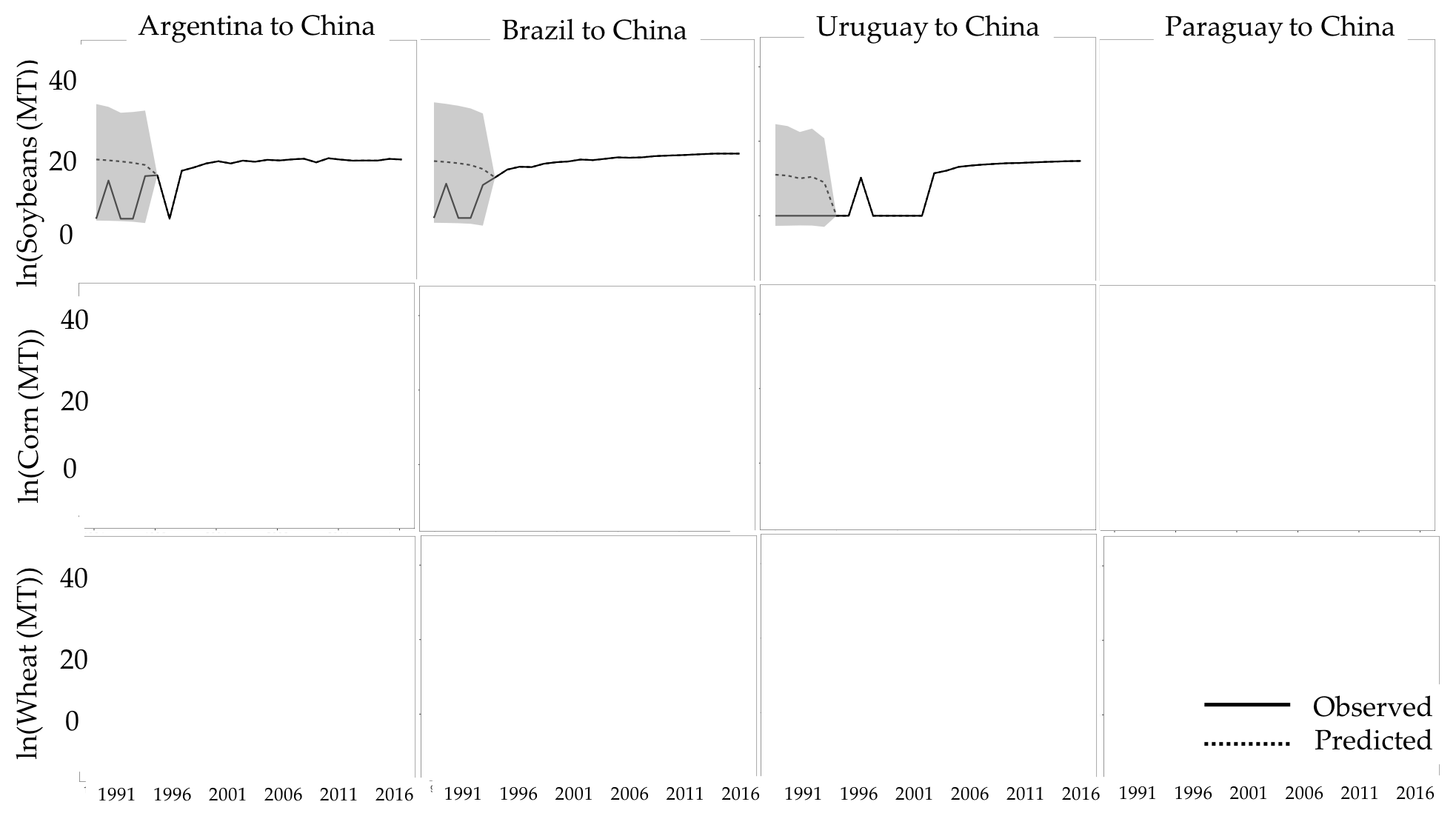
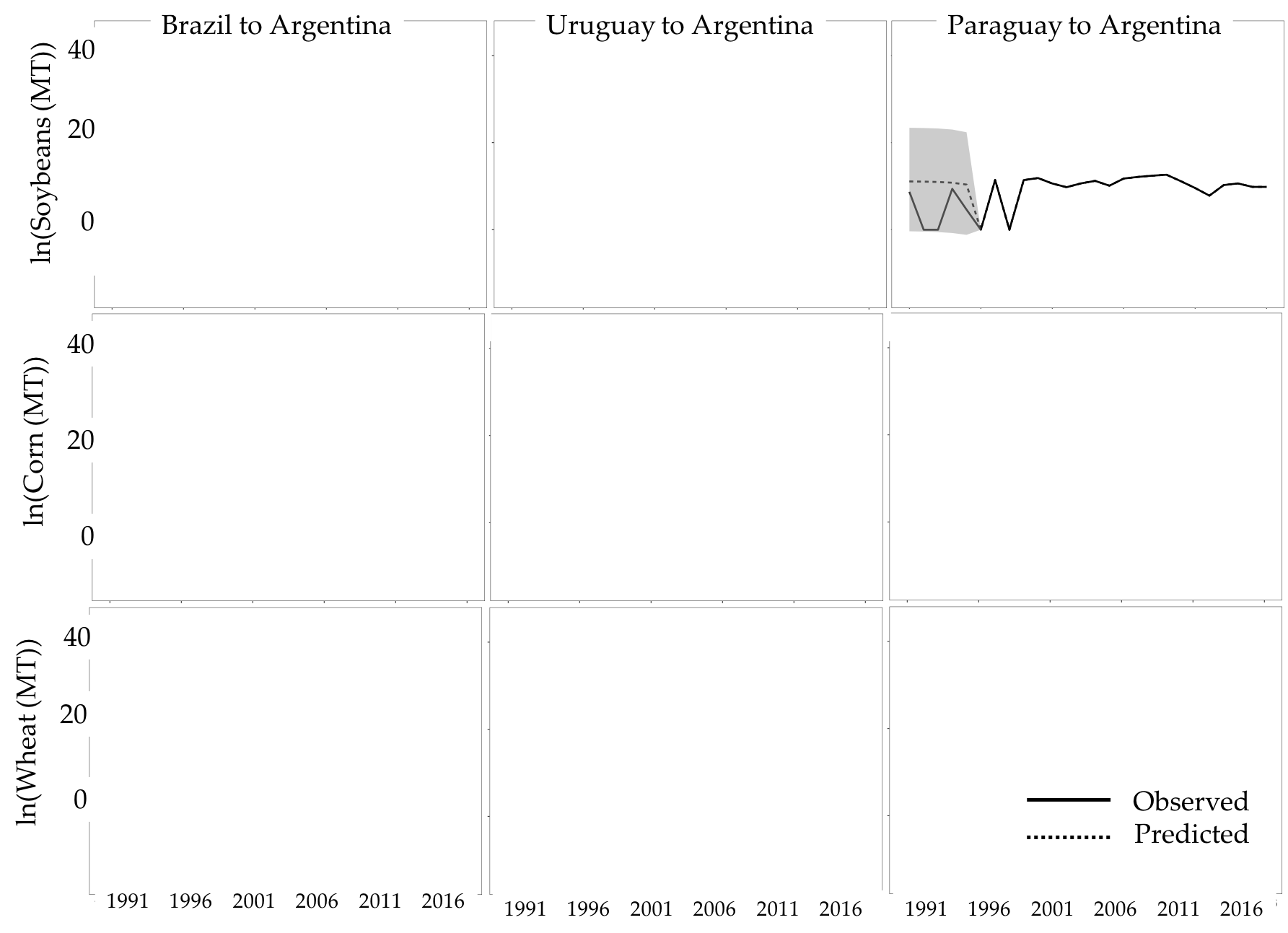
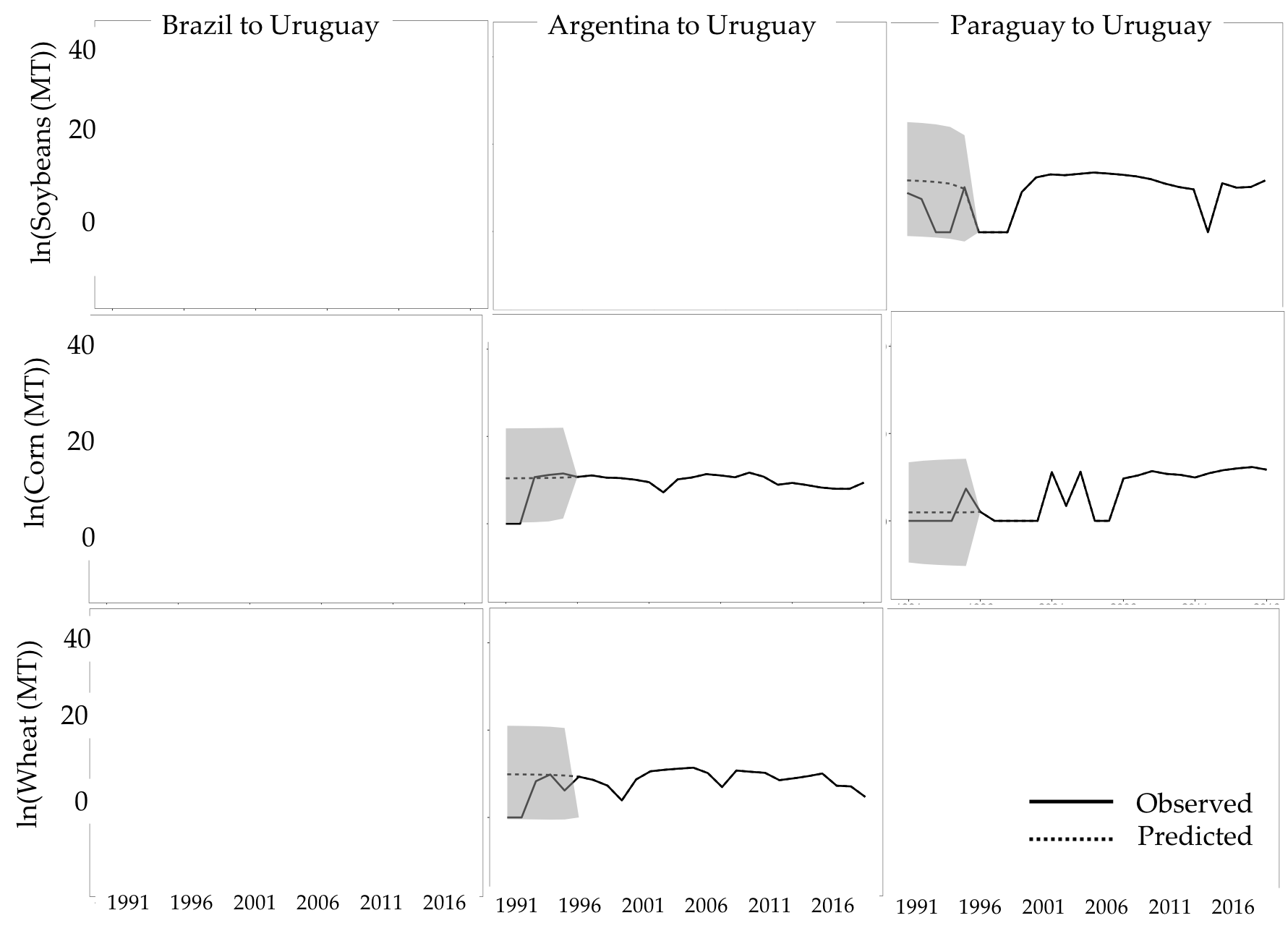
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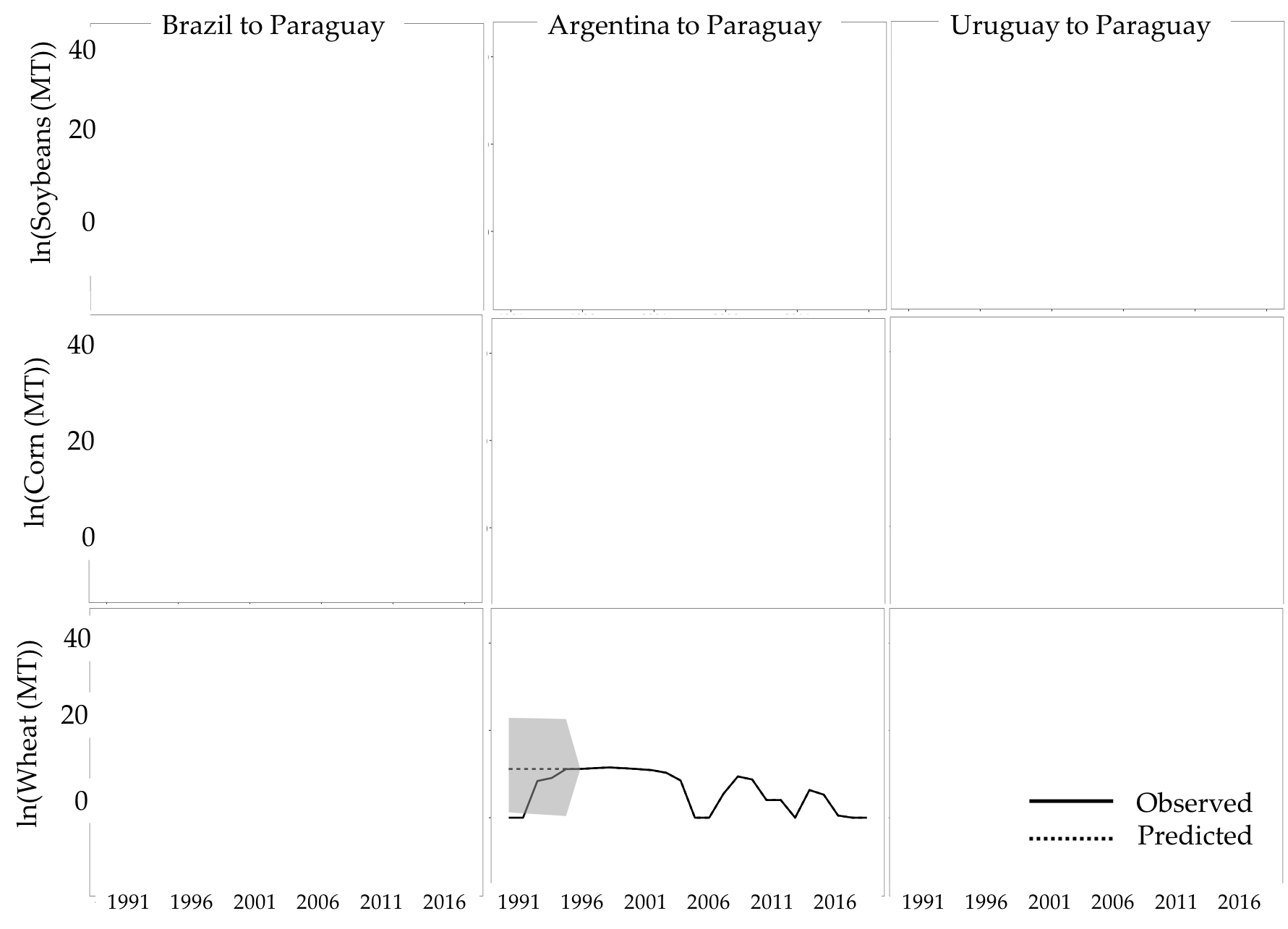
**Figure S1**. Full ARIMA results for China’s soybean, corn and wheat imports from Argentina, Brazil, Uruguay and Paraguay. The solid line represents the natural log of imports in metric tons and the dashed line represents the natural log of the trend derived from the ARIMA models. The shaded grey area is the 95% CI. Trade values below 25,000 MT per year were excluded. Blank graphs indicate no or very little trade occurred.



**Figure S2**. Full ARIMA results for Argentina’s soybean, corn and wheat imports from Brazil, Uruguay and Paraguay. The solid line represents the natural log of imports in metric tons and the dashed line represents the natural log of the trend derived from the ARIMA models. The shaded grey area is the 95% CI. Trade values below 25,000 MT per year were excluded. Blank graphs indicate no or very little trade occurred.

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**Figure S3**. Full ARIMA results for Uruguay’s soybean, corn and wheat imports from Argentina, Brazil and Paraguay. The solid line represents the natural log of imports in metric tons and the dashed line represents the natural log of the trend derived from the ARIMA models. The shaded grey area is the 95% CI. Trade values below 25,000 MT per year were excluded. Blank graphs indicate no or very little trade occurred.



**Figure S4**. Full ARIMA results for Paraguay’s soybean, corn and wheat imports from Argentina, Brazil and Uruguay. The solid line represents the natural log of imports in metric tons and the dashed line represents the natural log of the trend derived from the ARIMA models. The shaded grey area is the 95% CI. Trade values below 25,000 MT per year were excluded. Blank graphs indicate no or very little trade occurred.

**Table S1.** Description of final ARIMA models including *p* (# of lags), *d* (# of differences), *q* (# of error terms). Followed by parameter descriptions and p-values, (\*\*\*p < 0.001, \*\*p< 0.05 and \*p < 0.01). AR and MA parameters refer to the autoregressive and moving average model terms. The pericoupled parameters are relative to the country in the dependent variable and are the aggregated imports from the adjacent countries. For example, if Y = Soybean exports from Argentina to China, then pericoupled soybean imports are equal to Argentina’s soybean imports from Brazil, Uruguay and Paraguay. The fourth column includes the sum of the differences between the observed and predicted values for 1991-1995 in MT. Positive numbers can be interpreted as a predicted increase in trade during the pre period of X MT compared to the observed values; negative numbers indicate a predicted decrease of X MT during the pre period relative to the observed values. Finally, normalized root mean squared error (NRMSE) and mean absolute scaled error (MASE) were included as measures of model validity. NRMSE was normalized by dividing the RMSE by the standard deviations of the dependent variable. In both cases, values close to zero indicate a high performing model that captures the variation in the data. Values around 1 indicate the model is explaining some of the variation in the data, while values beyond 1 indicated noise and a low-performing model.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ARIMA Model (*p, d, q*) | Parameter | p-value | Σ(Observed- Predicted values) | NRMSE | MASE |
| Soybean exports from Argentina to China (*0, 1, 1*) | MA1 | 0.00\*\*\* | 21,065,499 | 0.55 | 0.82 |
| Pericoupled soybean imports | 0.27 |
| Pericoupled corn imports | 0.63 |
| Pericoupled wheat imports | 0.69 |
| Soybean exports from Brazil to China (*0, 2, 1*) | MA1 | 0.00\*\*\* | 12,115,029 | 0.11 | 0.71 |
| Pericoupled soybean imports | 0.05\* |
| Pericoupled corn imports | 0.7 |
| Pericoupled wheat imports | 0.1 |
| Soybean exports from Uruguay to China (*1, 1, 0*) | AR1 | 0.00\*\*\* | 174,735 | 0.06 | 0.4 |
| Pericoupled soybean imports | 0.05\* |
| Pericoupled corn imports | 0.9 |
| Pericoupled wheat imports | 0.69 |
| Soybean exports from Argentina to Brazil (*0, 1, 1*) | MA1 | 0.00\*\*\* | -515,895 | 0.78 | 0.7 |
| Telecouping (e.g., Brazil’s soybean exports to China) | 0.8 |
| Soybean exports from Uruguay to Brazil (*0, 2, 1*) | MA1 | 0.00\*\*\* | -180,406 | 0.37 | 1.1 |
| Telecouping (e.g., Brazil’s soybean exports to China) | 0.8 |
| Soybean exports from Paraguay to Brazil (*0, 2, 1*) | MA1 | 0.00\*\*\* | 2,217,646 | 0.71 | 0.92 |
| Telecouping (e.g., Brazil’s soybean exports to China) | 0.3 |
| Corn exports from Argentina to Brazil (*0, 1, 0*) | Telecouping (e.g., Brazil’s soybean exports to China) | 0.38 | -2,054,664 | 0.63 | 0.9 |
| Corn exports from Uruguay to Brazil (*0, 1, 0*) | Telecouping (e.g., Brazil’s soybean exports to China) | 0.9 | -18,305 | 0.4 | 0.97 |
| Corn exports from Paraguay to Brazil (*0, 1, 1*) | MA1 | 0.05\* | 423,823 | 0.51 | 1 |
| Telecouping (e.g., Brazil’s soybean exports to China) | 0.34 |
| Wheat exports from Argentina to Brazil (*0, 1, 0*) | Telecouping (e.g., Brazil’s soybean exports to China) | 0.58 | 12,012,323 | 0.6 | 0.94 |
| Wheat exports from Uruguay to Brazil (*1, 2, 1*) | AR1 | 0.00\*\*\* | 911,268 | 0.3 | 0.7 |
| MA1 | 0.00\*\*\* |
| Telecouping (e.g., Brazil’s soybean exports to China) | 0.46 |
| Wheat exports from Paraguay to Brazil (*3, 1, 1*) | AR1 | 0.00\*\*\* | 505,229 | 0.45 | 0.63 |
| AR2 | 0.00\*\*\* |
| AR3 | 0.00\*\*\* |
| MA1 | 0.00\*\*\* |
| Telecouping (e.g., Brazil’s soybean exports to China) | 0.00\*\*\* |
| Soybean exports from Paraguay to Argentina (*1, 1, 0*) | AR1 | 0.00\*\*\* | 248,227 | 0.12 | 0.8 |
| Soybean exports from Paraguay to Uruguay (*2, 0, 1*) | AR1 | 0.00\*\*\* | 417,083 | 0.23 | 0.79 |
| AR2 | 0.06 |
| MA1 | 0.00\*\*\* |
| Corn exports from Argentina to Uruguay (*1, 0, 0*) | AR1 | 0.00\*\*\* | 37,552 | 0.48 | 0.89 |
| Corn exports from Paraguay to Uruguay *(0, 1, 0*) |  |  | 1,565 | 0.47 | 0.9 |
| Wheat exports from Argentina to Uruguay (*1, 0, 0*) | AR1 | 0.00\*\*\* | 65,416 | 0.37 | 0.9 |
| Wheat exports from Argentina to Paraguay (*0, 1, 0*) |  |  | 271,462 | 0.45 | 0.96 |