An Evaluation of the 2015 Outbreak of Avian Influenza in the U.S.

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This study quantifies the impacts of the 2015 outbreak of the highly pathogenic avian influenza (AI) along the Pacific, Central and Mississippi flyways since mid-December 2014 based on a partial equilibrium, sector-specific modeling system. Production shocks for egg and turkey sectors as well as trade shocks for egg, turkey, and broiler sectors are generated according to actual data published by USDA. For the broiler industry, since there is no production shock and exports have been reduced by a substantial amount (15.5 percent), significant decreases in prices and increases in ending stocks and per capita consumption are expected. For the egg industry, more reduction in production than in exports have been induced and thus prices and imports are expected to be much higher and per capita consumption is expected to be lower than baseline projections. For the turkey industry, reduction in ready-to-cook turkey production is at a similar level as the reduction in Turkey exports; however, because of the big decrease in broiler price and the significant turkey-broiler cross price elasticity of the demand for turkey products, per capita consumption for turkey decreases and so do turkey prices.

Different levels of shocks have also been assumed for broiler production in the AI-outbreak regions; although this has not happened in reality, the simulation results help industry stakeholders get prepared. When there is a 5 percent decrease in the number of broilers slaughtered in South Central Region and the Other Region, broiler per capita consumption and ending stocks decrease, while retail price increases only 1 cent per pound. When there is a 10 percent decrease in broilers slaughtered in South Central Region and the Other Region, all changes due to the shock remain in the same direction but with a greater magnitude. Broiler retail price is 10 cents per pound higher than the baseline projection.

The lasting effects of the AI outbreak are examined by comparing the 10-year projection results for production, exports, prices, and per capita consumption for broiler, turkey, egg, and the related pork industry with their baseline scenario projections. In all cases, the effects of the shock on production started to fade out after the second year while the effects of the shock on exports lasted longer. Shocks on the broiler industry had larger effects on the other two poultry sectors than on the pork sector since the three poultry industries are closely correlated either from the supply side (broiler and egg) or from the demand side (broiler and turkey) compared to the pork industry.