

## **Risk, Arbitrage, and Spatial Price Relationships: Insights from China's Hog Market under the African Swine Fever**

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We use the 2018 outbreak of African Swine Fever (ASF) in China as a natural experiment to study spatial mechanisms behind the dynamics of market integration. We first apply pairwise price cointegration tests to show that Chinese provincial hog markets were highly integrated before the ASF outbreak, became segmented after the government banned live hog shipping across provinces, and re-integrated slowly after the ban was lifted. We build a unique dataset of weekly provincial hog prices and employ a newly developed spatial model to estimate the strength of price comovement across provinces in different periods around the ASF outbreak. Using reduced-form regressions, we explain determinants of the estimated interprovince price comovement. Results indicate that, in the highly integrated national market prior to the ban, longer geographical distances between two provinces did not weaken their price linkage. Longer distances became a significant obstacle to spatial price linkage in the post-ban periods, implying faster re-integration of hog prices between proximate provinces than between remote ones. Provinces that provided relatively accurate public information of ASF also re-integrated earlier. The longer a pair of provinces stayed under the ban, the weaker their price link became in the immediate post-ban period. This negative effect, though, turned insignificant in the longer run. We explain these effects by the interplay between arbitrage opportunities and imperfect information. Our findings suggest that information transparency is a key factor for market recovery from the damage caused by the shipping ban to curb animal pandemics like ASF.