

Overview of KSU Export Meat Demand Indices

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This short document provides an overview of how export meat demand indices maintained at KSU are created. This approach is based on changes in expected and observed (or more accurately stated, estimated) quantities of exports. The export meat demand indices are calculated by dividing observed export volumes by expected volumes (multiplied by 100 for indexing).

Before outlining details of the indices, a short refresher on what constitutes demand is useful. A clear distinction between *quantity demanded* and *demand* is necessary to comprehend demand, determinants of demand changes, and more narrowly the demand indices discussed herein. *Quantity demanded* is the quantity of product consumers will purchase at a given price when all other factors are held constant. *Demand* is a schedule of quantities consumers would purchase over a range of prices. Another way to make this distinction is to note *demand* refers to demand curves frequently presented by economists (i.e. graph with prices on a vertical axis and quantity on a horizontal axis) while *quantity demanded* refers to a single point (for a given price) on this demand curve. It is also worth reiterating that export demand is not export volume. Export volumes alone provide little information regarding demand when considered independently from prices.

To form export demand indices, information is needed on export volumes and values to derive an estimate of the price received per pound. Furthermore, we need export price indices for deflating nominal prices and price elasticity estimates. To be transparent in how the indices are created here we provide a summary of the sources underlying our creation of U.S. meat export demand indices:

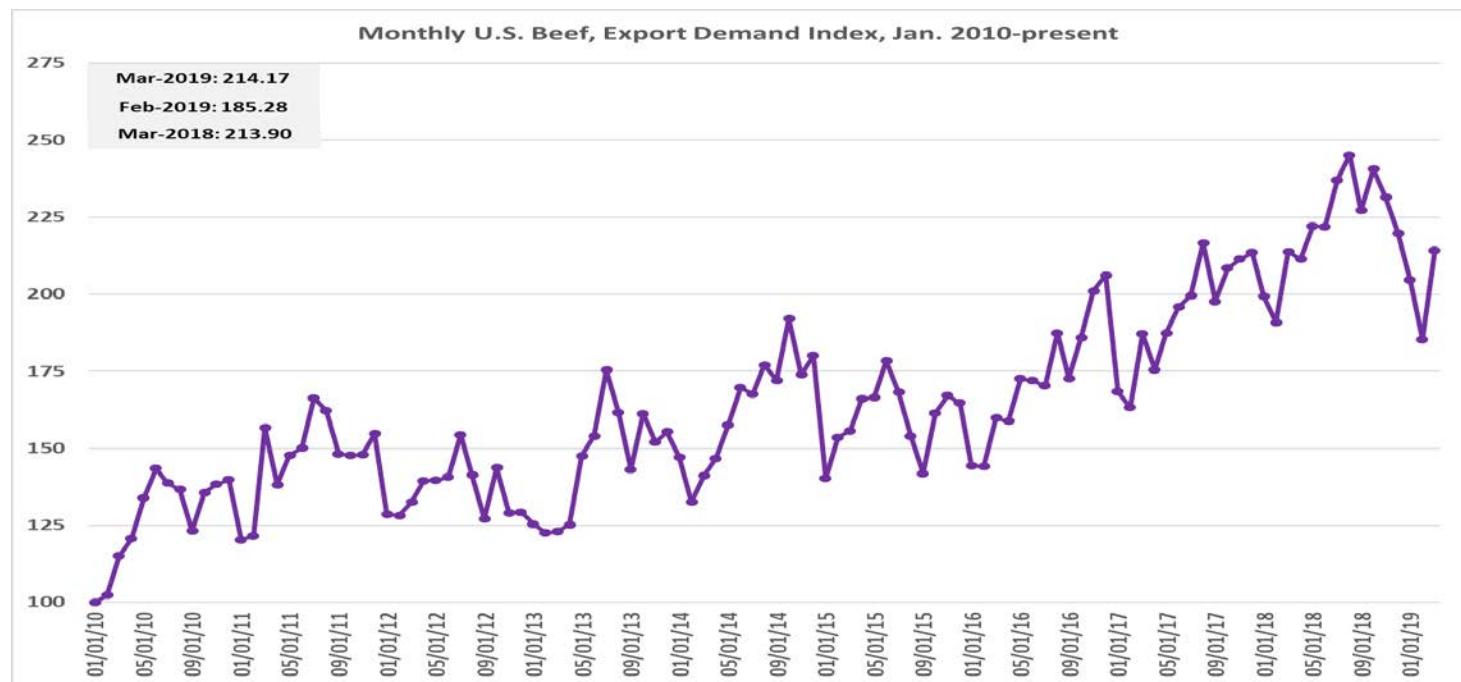
- Export values and volumes are obtained from the United States Department of Agriculture's Foreign Agricultural Service.
 - Specifically, the "Beef & Veal, Fr/Ch/Fz," "Variety Meats, Beef," "Pork, Fr/Ch/Fz," "Variety Meats, Pork," and "Broiler Meat" product categories are utilized. For beef and pork indices, fresh, chilled, and frozen ("Fr/Ch/Fz") estimates are merged with variety meat estimates to form combined values reflecting total exports.

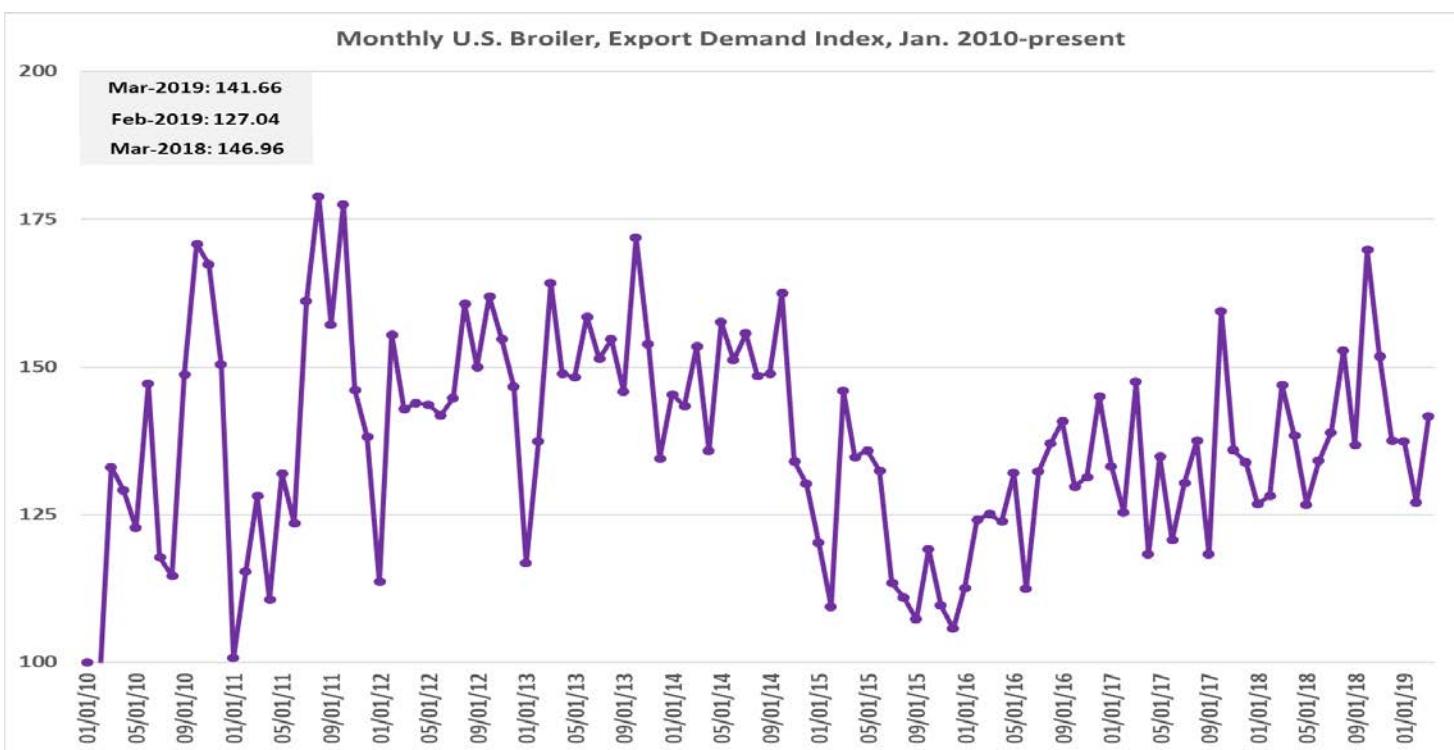
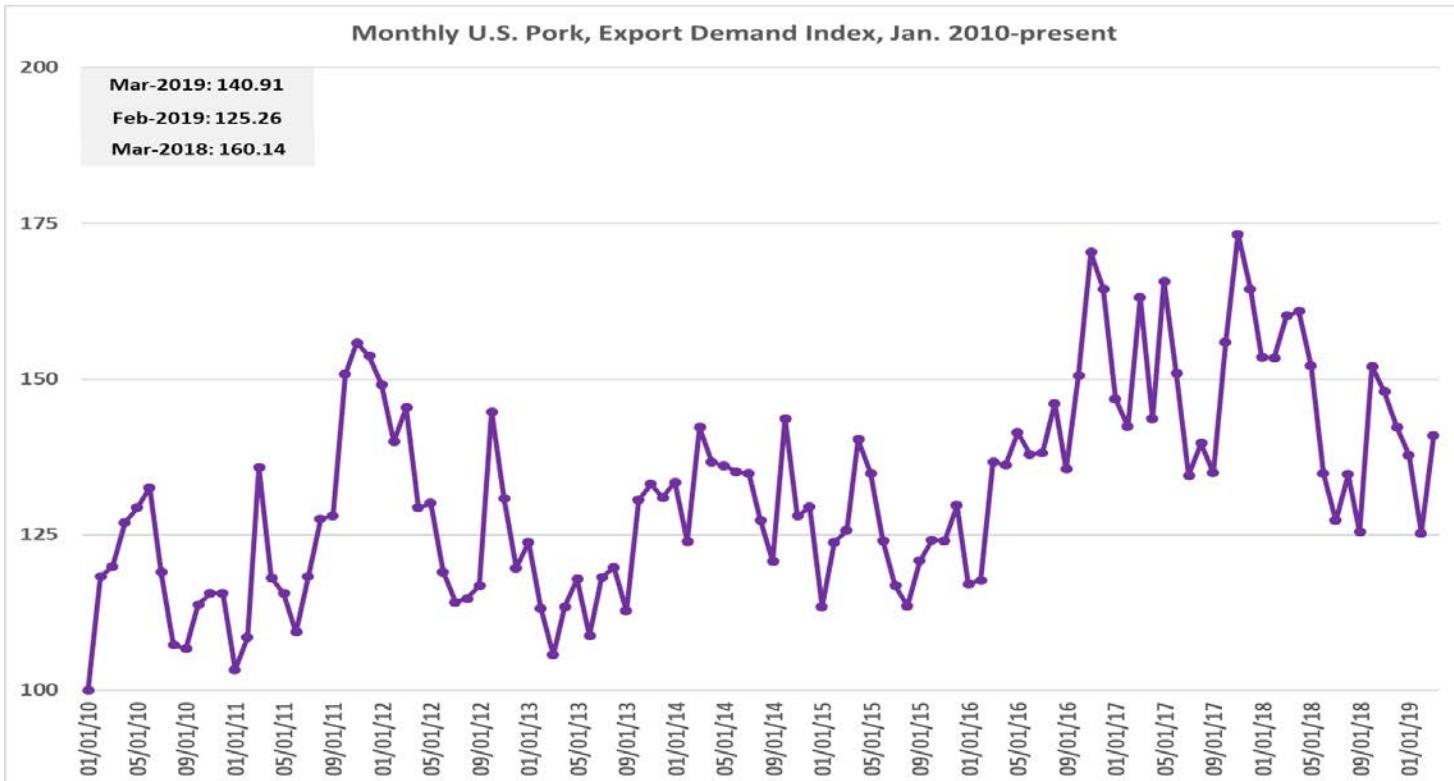
- The export price index is obtained from the Bureau of Labor Statistics ("EIUIQAG" series).
- Estimates of wholesale export demand elasticities utilized by Pendell et al. (2010) are used. In particular, elasticity estimates of -0.42, -0.89, and -0.31 are used for beef, pork, and broiler demand indices.

It is further worth noting that some of these individual data series are updated over time or may be released initially as preliminary estimates to subsequently be replaced with "final" estimates following revisions.

Accordingly, initial demand index values may be updated as input-data are modified.

These U.S. meat export demand indices were originally derived with a base period of January 1988 consistent with when monthly export data became available. However, given the very large increases in export volumes that have occurred, this led to index values that were not easy to utilize. For instance, this approach resulted in a December 2018 U.S. pork export demand index value of 2,298 reflecting export volumes increasing from 13.49 to 416.93 million pounds over this period. To provide user-friendly indices, a more recent base period of January 2010 was utilized. Resulting indices are shown in the following three charts.





These indices reveal how export demand for U.S. beef, pork, and broiler meat has grown substantially since January 2010. To aide interpretation, note the 214.17 value in March 2019 for beef. This indicates that export demand has more than doubled in the past decade. Specifically, the value of 214 indicates that beef export volumes were 114% higher in March 2019 than they would have been if demand had remained at January 2010 levels.

These export meat demand indices can be utilized with domestic meat demand indices for a more complete understanding of the current and historical, demand for U.S. meat which continues to increase in economic importance.

References

Pendell, D., G. Brester, T. Schroeder, K. Dhuyvetter, and G.T. Tonsor. (2010). "Animal Identification and Tracing in the United States." *American Journal of Agricultural Economics*. 92:927-940.

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