

Overview of KSU Export Meat Demand Indices

Glynn Tonsor (gtonsor@ksu.edu)

Kansas State University Department of Agricultural Economics – July 2026

This short document provides an overview of how updated 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). Here in July 2026, a procedural update was made and documented here to reflect the current approach employed.

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 (foreign consumers of U.S. meat here) 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.

Perhaps the first meat-livestock focused academic to “notably elevate awareness” that demand differs from consumption was Dr. Wayne Purcell (former faculty at Virginia Tech University). Dr. Purcell’s “*A Primer on Beef Demand*” is now a classic resource to which I often start associated history lessons. Dr. Purcell certainly deserves credit for notable heavy-lifting in the 1980s and 90s aiding the beef-cattle industry during a period of substantial demand challenges. Thereafter Dr. Jim Mintert (former faculty at both Kansas State University and more recently Purdue University) largely carried the torch supporting related meat demand resources maintained at Kansas State University. More recently, I have attempted to aid in monitoring meat demand and associated education efforts; ultimately desiring to increase economic viability from improved understanding consistent

with my interpretation of the land-grant university mission. Here export demand indices are of focus and regularly posted to AgManager.info accordingly.

Across this multi-decade history there have been several evolutions both in the data and information available to analysts as well as how analysts have examined changes in meat demand. This evolution can be expected (and hopefully encouraged) to continue. The last fact sheet (Tonsor, 2019) composed on this topic and posted to AgManager.info was dated May 2019. In short, the approach as applied during the May 2019 – April 2026 period was based on a ratio of observed (or more accurately stated, estimated) and expected (given observed prices and no demand change) quantities.

Fast forwarding to 2026 and I have had extended discussions with Dustin Aherin on related methodological matters. Dustin astutely recognized that the past approach to deriving expected (given no demand change) quantities was sensitive to the base index period selected. Ultimately, resulting assessment led to updating procedures that are now employed to indices maintained on AgManager.info.

To document clearly, the indices employed continue to compare observed (more accurately, estimated) quantities with quantities we would expect to observe if demand did not change (given observed changes in inflation-adjusted prices). The approach employed beginning here in July 2026 can be written as:

$$Index = \frac{Q_t^{Observed}}{Q_t^{Expected}} * 100 = \left[\frac{Q_t^{Observed}}{Q_0^{Observed} * \left\{ \left[1 + \left(\frac{P_t^{Observed} - P_0^{Observed}}{P_0^{Observed}} \right) \right]^{\left(\frac{\% \Delta Q}{\% \Delta P} \right)} \right\}} \right] * 100$$

where Q_t is quantity at time t , P_t is inflation-adjusted price at time t , *Observed* is estimated or observed, *Expected* is expected quantity given no demand change. The primary adjustment here is how the $\frac{\% \Delta Q}{\% \Delta P}$ term enters as an exponent to account for the constant proportional relationship of $\frac{\% \Delta Q}{\% \Delta P}$. Because price elasticity of demand ($\frac{\% \Delta Q}{\% \Delta P}$) is defined as the percentage change in quantity per a *very small* percentage change in price,

expected Q_t in the newly employed approach accounts for the compounding effect of multiple percentage changes in Q resulting from multiple very small percentage changes in P , like the concept of compound interest. A key benefit of this adjustment is that selection of the index's base period (Jan. 1988 in current AgManager maintained indices) no longer impacts month-over-month and year-over-year demand change conclusions.

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 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.

Tonsor, G.T. "Overview of KSU Export Meat Demand Indices." May 2019. Available at:

<https://agmanager.info/livestock-meat/meat-demand/monthly-export-beef-demand-indices-usdabls-data/overview-ksu-export-meat>

[View more information about the authors of this publication and other K-State agricultural economics faculty.](#)

For more information about this publication and others, visit [AgManager.info](https://agmanager.info).

K-State Agricultural Economics | 342 Waters Hall, Manhattan, KS 66506-4011 | (785) 532-1504 | Fax: (785) 532-6925

[Copyright 2026 AgManager.info, K-State Department of Agricultural Economics.](#)