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	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 9: Results for 'All Other Cows' derived from homogeneity and adding restrictions

Table 10: Results of Own and Cross Price Elasticities for All Other Cows, 1998

Table 11: Results for 'All Other Cows' derived from homogeneity and adding restrictions

Table 12: Results of Own and Cross Price Elasticities for Beef Cows, 1998

Table 13: Results for 'All Other Cows' derived from homogeneity and adding restrictions

Table 14: Results for 'All Other Cows' derived from homogeneity and adding restrictions

Table 15: Comparison of Prior Elasticities Using Different Unit Values Procedures<sup>10</sup>

B) Regressing unit values with production specific mean									
	Beef	Chicken	Pork	Other	Beef	Chicken	Pork	Other	
Beef	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Regressing unit values with either the BEGG mean unit value or with the predicted unit value from a regression on regional dummy variables and household total expenditures causes some small improvement in the estimated coefficients relative to the use of changing them down to the estimates from the Boston method. However, there is still no overlap with the confidence intervals for the beef and chicken own price elasticities. The fact that in the sample there are a large proportion of dummies that only have one consumer, so regressing unit values with the cluster mean is effectively the same as using the cluster mean for all households. Because of this, the fact that the quality elasticity for beef is below the level of the quality elasticity for chicken (see Table 2) suggests that the quality of quality of beef is higher than the quality of quality of chicken (see Table 2). This, in turn, suggests that the quality of quality of beef is higher than the quality of quality of chicken (see Table 2). This, in turn, suggests that the quality of quality of beef is higher than the quality of quality of chicken (see Table 2).

The results of other regressing unit values with cluster mean unit values or using cluster mean unit values in place of both household specific and missing unit values from a cross comparison of joint estimates and a single stage of confidence intervals with the estimates from the Boston method. The fact that in the sample there are a large proportion of dummies that only have one consumer, so regressing unit values with the cluster mean is effectively the same as using the cluster mean for all households. Because of this, the fact that the quality elasticity for beef is below the level of the quality elasticity for chicken (see Table 2) suggests that the quality of quality of beef is higher than the quality of quality of chicken (see Table 2). This, in turn, suggests that the quality of quality of beef is higher than the quality of quality of chicken (see Table 2).

Figure 1: Comparison of Own Price Elasticities from Different Methods of Using Unit Values

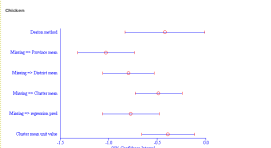
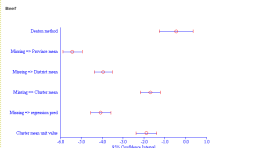


Table 16: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 17: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 18: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 19: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 20: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 21: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 22: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 23: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 24: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 25: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 26: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 27: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 28: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 29: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 30: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 31: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 32: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 33: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 34: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 35: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 36: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 37: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 38: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 39: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork	0.000	0.000	0.000	0.000
Other	0.000	0.000	0.000	0.000

Table 40: Results of Own and Cross Price Elasticities from the Boston Procedure

	Beef	Chicken	Pork	Other
Beef	0.000	0.000	0.000	0.000
Chicken	0.000	0.000	0.000	0.000
Pork				

Although the same weights are applied for all households, they are included in each case to account for goods not purchased to ensure that the weights add to one for each household (Denton, 1993).

It is not possible to add them at the first (beef-chicken) stage because the cluster fixed effects eliminate them.

The unexpected result for other meat could be because this item is an aggregation of 14 different types of meat. This aggregation also means that there is less variance entered in this category than there is for beef and chicken. To keep the focus on these two products, the results reported below contain the own-price elasticity for other meat to be the same as for all other, non-meat products.

Denton (1993) used BLS/NAHS data to estimate price elasticity for meat. He does not however disaggregate the meat category. So we cannot compare with his estimates.

The estimated own price elasticities using unaggregated unit values on the subset of households recording consumption of each good do not conform with the economic theory as it gives positive own price elasticity for beef and chicken (with the exception of own price elasticity for chicken in urban areas). The elasticity estimates using unaggregated unit values are available from the authors.

Some of the previous food demand elasticities calculated from BLS/NAHS data have in fact used the method of replacing household-specific unit values with cluster means (Cain, 1991; Cain, 1995), so the results here may provide some support for this procedure.

Moreover, there is some Monte Carlo simulation evidence in favour of the model reported in Denton (1993).

