Methodology for Protein Demand

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The study will mainly focus on attempting to explain why the demand for chicken the highest and why other meat proteins do not compare by explaining the differences in demand. The models used for exploring the differences in demand for meat proteins are created by creating demand equations for each protein using pooled quarterly data. The pooled data will consist of time-series with cross-sections.

The selected variables included in the analysis include the demand for chicken, beef, pork, and fish proteins, which will be the dependent variable. There will be an equation for each dependent variable, consisting of the independent variables. The independent variables include the average weekly wage rate of full-time employees, the price of one product from the proteins observed which include chicken, sirloin steak, pork chops, and canned salmon, and the final variable, population. To further explore the data, the usage of lagged dependent variables will help reduce variance and any omitted variable bias in the case of a past dependent variable affecting current dependent variables.

To test the proposed models, regression analysis will determine whether the model is able to explain the demand for meat proteins and whether the variables are statistically significant. The speculation for this study is that the coefficients for variables such as population and wage may cause a significant effect on the demand for meat. The sign for population will be positive as the population continues to grow and increases demand. The sign for income may vary as a negative sign means income will decrease and thus decreasing demand. Income with a positive sign will result in increases in demand for protein. As for the prices, the variables will have a less significant effect on demand. Although the signs will be positive, if the sign for the price of one protein product is positive, the associated protein of the category the product belongs to will cause demand to fall. Other protein prices that do not fall in the same category as the observed protein demand will cause demand to increase if the prices have a positive sign coefficient.