$$U = \sqrt{\frac{\sum_{i=1}^{n} (\hat{Y}_i - Y_i)^2}{\sum_{i=1}^{n} Y_i^2}}$$

where U = the Theil inequality coefficient,
$\hat{Y}_i$ = projected number of farms in size class i, and
Y_i = actual number of farms in size class i.

The accuracy of projections is determined primarily by comparing actual 1974 numbers with projections. To further indicate the degree of projection accuracy in each size class, the simple percentage differences are also shown.

The accuracy of the projections differs among the four projection methods. In general, projections of farm numbers and size distributions by acreage tend to be more accurate than those by sales. This is understandable since projections by sales are complicated by the inflation factor. Even though specific attempts were made to account for the effects of inflation in changes in farm numbers of the Markov chain and age cohort analyses, some errors of measurement probably remain.

Simple trend extrapolation typically gives fairly accurate projections by acreage, but commits a larger error of projections by sales (tables 36 and 37). A 13.2-percent error rate was found for the projections by sales in 1974, but the error rate was greater for farms with sales of $40,000 and over. 16/ This partly reflects the fact that the simple trend extrapolation tended to underestimate the shifts in farm numbers from low to high sales as a result of the 80-percent increase in prices received by farmers during the 1969-74 period. The projected numbers of small farms do not differ significantly from actual 1974 numbers.

The simple trend extrapolation method in years other than 1974 yielded a similar accuracy and pattern. Theil-U inequality coefficients of 0.0151 and 0.0084 were computed for 1964 and 1969 projections based on acreage. Those low numbers reflect the insignificant changes in prices received by farmers in the sixties.

The negative exponential function is a procedure to project the size distribution, especially when acreage is used as the size measure. As we indicated before, this method was not very satisfactory for projections based on

16/ The U coefficient of 0.13 for the trend extrapolation by sales class means that there is an average difference of 13 percent between actual and projected farm numbers in 1974. The smaller the U coefficients, the better is the projection accuracy.