Sales of live animals.—The 1954 questionnaire called for the number and value of sales of animals sold alive from the place during 1954. Since the 1954 Census was a fall enumeration, an additional problem was involved in getting information on animals sold alive. It was necessary not only to ask the respondent for sales he had made during 1954 prior to the date of the enumeration, but also for an estimate of sales he would make during the remainder of 1954. Some respondents may not have reported sales to be made after the enumeration but before December 31, 1954.

Source and Reliability of Data

Source of data.—The data presented in this report are estimates based upon data for the 1954 Census of Agriculture. The tabulations on which the estimates were made included approximately 20 percent of all farms in the United States. For a description of the sample and sampling procedures, see page XIX of the Introduction to Volume II of the reports for the 1954 Census of Agriculture.

Method of estimation.—Data tabulated for the sample of farms were expanded to represent figures for all farms. The expanded figure for an item was obtained by multiplying by five the tabulated total for that item for the farms in the 20 percent part of the sample and adding the total for the specified farms.

Reliability of estimates based on the sample.—The estimates based on the tabulation of data for a sample of farms are subject to sampling errors. Approximate measures of the sampling reliability of estimates are given in Table 2 for farms reporting and for item totals. These measures indicate the general level of sampling reliability of the estimates, but do not include adequate allowances for sources of error other than sampling variation as, for example, errors in original data furnished by farmers. Sources of error other than sampling may be relatively more important than sampling variation.

In general, the measures of sampling reliability presented are conservative in that they tend to overestimate the variations in sample estimates, because (1) the predicted limits of error do not always take fully into consideration that complete data were tabulated for all specified farms and (2) the maximum figures intended to serve for all economic areas were used. Consequently, there is a tendency to overestimate the variations in the sample, especially for groups with large numbers of farms or for groups for which the totals for specified farms represent a high percentage of the item totals.

Data in Tables 2 and 3 are given to assist in determining the general level of sampling reliability of estimated totals. In Table 3 a list of the items is given and the level of sampling reliability as shown in Table 2 is indicated. By referring to Table 2 in the column for the level of sampling reliability designated in Table 3 the sampling error according to the number of farms reporting may be obtained. For farms reporting, the indicated level of sampling is level 1. Table 2 shows percentage limits such that the chances are about 68 in 100 that the difference between the estimates based on the sample and the figure that would have been obtained from a tabulation for all farms would be approximately within the limit specified. However, the chances are 99 in 100 that the difference would be less than two and one-half times the percentage given in the table.

The data in Table 2 indicate that when the number of farms reporting specified items is small, the item totals are subject to relatively large sampling errors. Nevertheless, the considerable detail for every classification for each item is presented to insure maximum usefulness for appraising estimates for any combination of items that may be desired.

Percentage figures and averages derived from the tables will generally have greater reliability than the estimated totals; also, significant patterns of relationships may sometimes be observed even though the individual data are subject to relatively large sampling errors.

TABLE 2.—SAMPLING RELIABILITY OF ESTIMATED NUMBER OF FARMS, FARMS REPORTING, AND TOTALS FOR SPECIFIED ITEMS, SUBREGIONS, AND UNITED STATES: CENSUS OF 1954

If the estimated number of farms or farms reporting is—	Then the chances are about 2 in 3 that the estimated number would differ from result of a complete tabulation by less than—			
	Level 1 [1]	Level 2	Level 3	Level 4
	Percent	*Percent*	*Percent*	*Percent*
500	9.8	14	19	25
1,000	6.9	9.8	13	18
2,500	4.4	6.2	8.3	11
5,000	3.1	4.3	5.8	8.0
10,000	2.2	3.0	4.1	5.6
25,000	1.4	2.0	2.6	3.5
50,000	1.0	1.4	1.9	2.5
100,000	0.7	0.9	1.3	1.8
250,000	0.4	0.6	0.8	1.2
500,000	0.3	0.4	0.6	0.8

[1] Level 1 should be used in determining the sampling reliability of estimated numbers of farms and farms reporting.

Differences in published data.—In some cases, the data in this report will differ slightly from those for the same item given in other reports for the 1954 Census of Agriculture, because, as a matter of economy, adjustments in the tabulations were not made when the differences were not great enough to affect the usefulness of the data. These differences usually amount to less than one-half of one percent of the total for the item.