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average center very close to July 1, and have an unknown standard deviation about their average.

Using the methods by which we arrived at the first figure, 2.19, for the 1950 standard deviation, we find a standard deviation of 1.38 months for 1928. As would be expected, in the earlier year the dispersion about the average center is much smaller than in 1950. If the recent expansion in the use of fiscal-year reporting continues after 1950, we may expect that the dispersion of the centers of the various accounting periods about their average center will continue to increase, and the assumption that the whole system of returns may be treated as having an average accounting period centering at a stated date—no matter how close to or far from July 1—will become increasingly less dependable. The increased dispersion within the system detracts from the usefulness of any average for the whole system.

Thus far the weights used in locating the center of the average accounting period have been percentages in terms of number of returns. We can, of course, carry out similar calculations of the central date for various years by using as weights any of the measures of importance heretofore examined. Table 8 shows the results—including those already found for number of returns—for net income, deficit, difference between net income and deficit, total assets, and total compiled receipts.

These results show considerable differences according to type of weighting system, and between the specified years for any one system. But none of the figures in the final column implies any wide departure of the average center from July 1—the greatest departure is about ten days for 1950 under the number-of-returns weights. For the corporate system as a whole, we find then that the average accounting period has had a center falling only a few days after July 1. Except for the warning that dispersion detracts from the dependability of such an average, we may therefore say that the assumption that the *Statistics of Income* tabulations for the corporate system as a whole pertain to an average year centered at July 1 of the year of tabulation is approximately valid. Even with the recent great expansion in fiscal-year reporting, the validity of this finding has not been seriously impaired. We shall see in Part II that this finding does not necessarily remain valid for certain lines of industry within the entire corporate system, when studied separately.

## PART II. DIFFERENCES AMONG LINES OF INDUSTRY

8. *The industrial classification.* Issues of *Statistics of Income* for 1946–1949 include tabulations from fiscal-year returns classified by major industrial groups. These are the same groups, except for occasional changes in the breakdown of classes, that are presented in the principal tables in *Statistics of Income* for all returns (and all balance-sheet returns), regardless of dating of the accounting periods, 1938 to 1950. The data for fiscal-year returns for 1946 to 1949 appear in two tables, one for all returns whether or not accompanied by balance sheets, and the other for balance-sheet returns. Each table appears in two parts—one for returns with net income, the other for returns with no net income. The first table shows, for each industrial class, number of returns and amount of net income (or deficit); the second table shows number of returns and amount of total assets.

The 1949 (and 1948) tables include 77 lines, each showing figures for all fiscal-year returns and a breakdown for the eleven fiscal-year months.<sup>15</sup> The first of these lines is for the entire corporate system, regardless of type of industry. Nine of the lines relate to 8 broad industrial divisions—Agriculture, Mining, Construction, Manufacturing, Public utilities, Trade, Finance (including insurance, real estate, and lessors), and Services—and an unclassified division of returns not allocable among the specific divisions. The remaining lines of the table pertain to various groups within each division (except Construction) and to various subgroups within certain of the groups of the Trade and Finance divisions. As 12 of the lines represent subtotals of classes shown in other lines of the table, the industrial classification actually includes in 1949 65 mutually exclusive line-of-industry classes; of these, 2 are not-allocable classes. Eliminating the 2 not-allocable classes (numbers 56 and 77), and eliminating 4 classes combined into other classes in Table 9, 59 mutually exclusive classes are left. This provides a fairly detailed breakdown by line of industry.

The term "mutually exclusive" must not, however, be read literally. The classification of corporate tax returns is not as clear-cut as it appears superficially, because any particular corporation is in fact classified by its principal business activity, defined in income-tax Form 1120 as the activity which accounts for the largest percentage of "total receipts." As many corporations, especially the larger ones, engage in more than one line of activity, the entire industrial classification of the corporate data is seriously lacking in precision. Even for the broad divisions, considerable lack of precision exists; for example, a single corporation may in fact be engaged in mining, manufacturing, and trade, and yet its entire account will necessarily be tabulated in only one of these divisions. A possibility exists that, for the broad divisions, some of these classification errors are partially offset by other classification errors in the opposite direction, with the result that the accounting aggregates for a particular division *may* not be seriously in error as reflecting conditions in that broad line of industry. For the more finely divided classes (the groups and subgroups), however, the possibility that the classification errors tend to offset each other is generally much less substantial. One must therefore be careful not to overlook the possible classification errors in any interpretation of the corporate tabulations as reflecting conditions in specified lines of industry.<sup>16</sup>

For one table appearing in *Statistics of Income*—not, however, a table for fiscal-year returns—a much more detailed industrial classification is presented.<sup>17</sup> This table shows 279 lines, including the 77 classes noted above. The additional

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<sup>15</sup> Because of minor differences in the scheme of classification, the tables for 1946 and 1947 show 86 lines. To provide comparability of 1946 and 1947 figures with those for 1948 and 1949 in my Table 9, I have combined 23 of the 86 lines of the earlier years into ten composite classes, and 7 of the 77 lines of the later years into three composite classes (see footnotes to Table 9).

<sup>16</sup> The word "error" is used here, not in the sense of a mistake in the assignment of a corporation to a class, but in the sense of the unavoidable inclusion in a particular class of the results of operations in lines of activity outside that class. Errors, in the sense of mistaken assignment to class, can of course exist. Form 1120 calls upon the reporting corporation to classify itself; and, although effort to classify properly is probably generally made, we cannot be sure that the classification invariably reflects the situation accurately. Moreover, as this is an item of information on the tax return which ordinarily has no part in determining the tax liability, we may suspect that somewhat less care is taken in reporting it than in reporting the facts essential to calculation of the tax. Finally, the class in which a particular corporation falls may change from year to year, as the identity of its principal business activity changes.

<sup>17</sup> *S. of I.*, 1949, pp. 70-79. See also an analysis of a similar table for 1946 in W. L. Crum, *Age Structure of the Corporate System*, University of California Press, pp. 165-175.

TABLE 9

FISCAL-YEAR RETURNS AS A PERCENTAGE OF ALL BALANCE-SHEET RETURNS IN TERMS OF NUMBER AND TOTAL ASSETS, AND AS A PERCENTAGE OF ALL NET INCOME OR DEFICIT FOR RETURNS WITH NET INCOME OR NO NET INCOME AND BOTH CATEGORIES COMBINED, BY INDUSTRIES, 1946 AND 1949

	Balance-Sheet Returns			All Returns, 1949		
	Number		Total	Net Income, for Net Income Returns	Deficit, for Returns with No Net Income	Both Combined
	1946	1949	Assets 1949			
	(a)	(b)	(c)	(d)	(e)	(f)
1. All industrial groups	28.8	36.0	13.2	21.6	37.4	20.2
2. Agriculture, forestry, and fishery	36.7	44.8	37.9	33.7	43.2	31.9
3. Farms and agricultural services	37.9	45.7	38.3	33.8	44.4	32.0
4. Forestry	14.7	25.4	30.6	26.9	17.4	29.2
5. Fishery	35.7	41.6	33.4	38.7	37.7	42.6
6. Mining and quarrying	23.8	31.8	15.4	14.2	30.6	11.6
7. Metal mining	16.5	19.0	3.2	1.9	16.6	0.8
8. Anthracite mining	29.5	32.5	3.2	5.1	10.0	3.8
9. Bituminous coal and lignite mining	23.9	30.7	20.8	25.9	25.6	26.0
10. Crude petroleum and natural gas production	26.6	35.9	19.2	14.6	35.8	10.9
11. Nonmetallic mining and quarrying <sup>d</sup>	20.8	29.1	19.2	18.1	37.5	16.6
12. Construction	25.3	36.6	33.9	31.0	41.0	29.6
13. Manufacturing	33.1	40.2	23.3	21.9	39.5	20.5
14. Beverages	29.9	35.3	44.5	33.9	45.7	32.9
15. Food and kindred products	34.5	41.8	43.2	35.2	58.8	32.9
16. Tobacco manufactures	19.9	23.8	8.4	9.9	25.6	9.8
17. Textile-mill products <sup>d</sup>	39.5	46.5	41.2	44.3	32.2	45.9
18. Apparel and products made from fabrics	48.0	54.1	53.7	51.4	54.7	49.5
19. Lumber and wood products, except furniture	30.8	39.6	30.5	29.5	43.1	26.8
20. Furniture and fixtures	32.2	43.1	41.9	41.5	40.9	41.6
21. Paper and allied products	28.0	32.7	25.5	24.8	42.4	23.9
22. Printing, publishing, and allied industries	24.3	31.0	19.4	20.1	30.1	19.3
23. Chemicals and allied products	30.4	36.8	24.1	22.0	33.0	21.6
24. Petroleum and coal products	24.1	34.5	2.5	3.7	33.8	2.8
25. Rubber products	32.4	36.5	26.3	22.5	40.0	21.1
26. Leather and products	44.5	50.7	64.8	66.1	45.0	72.5
27. Stone, clay, and glass products	21.1	30.1	13.5	11.9	28.1	11.3
29. Primary metals, and fabricated metal products except machinery <sup>a, b</sup>	28.8	35.8	14.0	16.8	34.8	14.8
30. Machinery, except transportation equipment and electrical	29.7	36.4	37.3	34.4	36.8	34.2
31. Electrical machinery and equipment	34.0	42.0	10.2	10.6	35.7	8.9
32. Transportation equipment, except motor vehicles	36.9	39.6	32.3	36.6	43.3	35.4
33. Motor vehicles and equipment, except electrical	29.1	39.3	9.9	6.0	14.0	5.7
36. Other manufacturing <sup>a, b</sup>	34.6	42.5	31.0	32.2	45.1	29.5
37. Public utilities	17.9	22.2	1.8	3.6	12.9	3.2
38. Transportation	21.5	25.7	2.5	6.3	13.7	5.5
39. Communication	7.9	12.5	0.8	2.0	10.7	1.6
41. Other public utilities <sup>b</sup>	9.0	11.8	1.3	1.5	5.0	1.5
42. Trade	34.0	41.4	46.3	45.3	44.5	45.4
43. Wholesale	35.5	43.7	41.8	42.5	42.6	42.4
44. Commission merchants	35.5	42.1	42.2	39.3	44.4	38.2
45. Other wholesalers	35.5	44.0	41.7	42.8	42.4	42.8
46. Retail	33.0	39.9	51.8	47.9	46.7	48.0
47. Food	29.4	37.6	44.8	44.7	38.6	45.0
48. General merchandise	39.9	45.8	71.3	66.9	65.6	66.9
49. Apparel and accessories	49.3	56.3	65.9	62.4	64.0	61.8

TABLE 9—(continued)

	Balance-Sheet Returns			All Returns, 1949		
	Number		Total Assets	Net Income for Net Income Returns	Deficit, Returns with No Net Income	Both Combined
	1946	1949	1949	(d)	(e)	(f)
50. Furniture and house furnishings	31.5	43.2	46.4	49.3	44.4	50.9
51. Automotive dealers and filling stations <sup>a</sup>	20.8	27.8	24.3	21.3	32.1	20.3
52. Drug stores	27.9	35.7	43.0	54.1	30.1	58.0
53. Eating and drinking places	31.4	38.0	39.8	40.1	45.3	33.6
54. Building materials and hardware <sup>a</sup>	26.9	30.3	29.7	28.5	35.3	27.7
55. Other retail trade <sup>a</sup>	37.6	45.4	47.8	49.6	50.0	49.5
56. Trade not allocable	34.3	41.9	38.6	39.1	43.0	38.3
57. Finance, insurance, real estate, and lessors of real property	21.4	27.4	5.3	9.5	25.5	8.8
58. Finance	14.4	18.3	4.2	11.0	16.5	10.7
59. Banks and trust companies	2.7	3.3	2.2	2.4	4.6	2.4
60. Credit agencies other than banks <sup>a</sup>	26.0	32.2	18.9	21.1	26.5	20.6
61. Holding and other investment companies <sup>a</sup>	19.5	22.7	13.8	16.7	13.6	16.9
62. Security and commodity-exchange brokers and dealers	28.5	32.5	24.0	28.1	24.6	29.0
63. Insurance carriers and agents	12.7	17.6	0.2	0.5	6.3	0.5
64. Insurance carriers	2.2	2.5	0.0	0.0	0.0	0.0
65. Insurance agents and brokers	16.2	22.2	18.4	17.4	19.8	17.1
66. Real estate, except lessors of real property other than buildings	25.3	31.9	37.4	35.2	35.0	35.2
67. Lessors of real property, except buildings	14.1	18.5	4.1	7.5	24.5	6.3
68. Services	30.5	37.9	40.5	34.4	43.8	32.3
69. Hotels and other lodging places	34.1	41.2	41.1	36.6	44.9	34.5
70. Personal services	29.4	36.5	33.6	32.7	42.5	30.2
71. Business services	27.8	36.0	25.5	24.5	45.0	20.9
72. Automotive repair services and garages	27.6	37.1	37.9	40.4	38.2	40.9
73. Miscellaneous repair services, hand trades	26.5	34.8	28.3	22.4	41.7	12.3
74. Motion pictures	35.6	41.8	53.5	35.4	47.6	33.7
75. Amusement, except motion pictures	34.5	39.7	48.7	55.2	45.6	59.5
76. Other services, including schools <sup>a</sup>	28.3	37.3	32.2	33.6	36.0	32.5
77. Nature of business not allocable	22.0	34.2	26.7	59.7	30.5	180.5

<sup>a</sup> To provide comparability with 1948 and 1949, each of these classes combines certain classes shown separately in *S. of I.*, 1946 and *S. of I.*, 1947. The titles (and serial numbers) shown above, except for classes also marked b, are those given in *S. of I.*, 1949. The *S. of I.* classes included in each composite class are as follows:

- 11. Nonmetallic mining and quarrying; Mining and quarrying not allocable
- 17. Cotton manufactures; Textile-mill products, except cotton
- 29. Iron, steel, and products; Nonferrous metals and their products
- 36. Other manufacturing; Manufacturing not allocable
- 51. Automotive dealers; Filling stations
- 54. Hardware; Building materials, fuel, and ice
- 55. Package liquor stores; Other retail trade; Retail trade not allocable
- 60. Long-term credit agencies, mortgage companies, except banks; Short-term credit agencies, except banks; Finance not allocable.
- 61. Investment trusts and investment companies; Other investment companies, including holding companies; Other finance companies
- 76. Other service, including schools; Service not allocable

<sup>b</sup> To provide comparability with 1946 and 1947, each of these classes combines certain classes shown separately in *S. of I.*, 1948 and *S. of I.*, 1949. The titles shown above for these classes are adapted by rough combinations of the titles shown in *S. of I.*, 1949 for the classes thus combined. The *S. of I.* classes included in each composite class are as follows:

- 29. Primary metal industries; Fabricated metal products, except ordnance, machinery, and transportation equipment; Ordnance and accessories
- 36. Scientific instruments, photographic equipment, watches, clocks; Other manufacturing
- 41. Electric and gas utilities; Other public utilities

202 lines give subclasses for most of the 77 classes called "major groups" in the general *Statistics of Income* tabulations. These additional data are somewhat helpful in determining the make-up of some of the major groups examined below.

9. *Industrial differences in fiscal-year reporting: number of balance-sheet returns.* In examining the share of fiscal-year returns among all returns for each specified line of industry, we shall first give attention to the balance-sheet returns. A glance at the first two columns of Table 9 reveals that without a single exception the 1949 percentage was above that for 1946. In other words, the 1946-1949 general expansion of fiscal-year reporting noted in Part I appears to have occurred in all lines of industry, though it was much greater for some classes than for others.

Here, however, we are especially interested in differences among lines of industry in any one year, and present remarks are confined to the figures for 1949. First, we may note important differences among the eight broad divisions, as follows:

2. Agriculture	44.8	37. Public utilities	22.2
6. Mining	31.8	42. Trade	41.4
12. Construction	36.6	57. Finance	18.3
13. Manufacturing	40.2	68. Services	37.9

For three divisions, Mining, Public utilities, and Finance, the percentages are below the over-all figure of 36.0 for the entire corporate system, and for the other five divisions, above. The highest figure is for Agriculture, which may reflect the fact that, except perhaps in Forestry, enterprises in this line are generally subject to a seasonal pattern which encourages fiscal-year reporting. We shall find other lines of industry—though not entire divisions—in which the accounting period tends to have its terminal month in the slack season. The next highest ratios are for Trade and Manufacturing, and we can best attempt to explain these high percentages later in examining the evidence for groups or subgroups within these divisions. The figures for Construction and Services are barely above the over-all figure of 36.0, and at this stage we merely remark that these divisions show no peculiar tendency as to the degree of fiscal-year reporting.

Among the divisions with percentages below the over-all figure, I can suggest no explanation for Mining; but note that the percentage for every group within that division is also below the over-all figure. The lowest percentages are for the Finance and Public utilities divisions, and the probable chief explanation in each case is that many of the enterprises covered are subject to supervision and regulation by public authority. Insofar as the regulatory authorities require reporting on a calendar-year basis, one may suppose that the corporations would tend to file for taxes on the same basis. An important group within the Finance division is Insurance, and those life insurance companies which file on Form 1120L and those mutual insurance companies which file on Form 1120M apparently have no choice but to file for the calendar year.<sup>18</sup> This presumably

<sup>18</sup> Instruction B on Form 1120L (and Form 1120M) for 1949 reads: "The return shall be for the calendar year ending December 31, 1949, and the net income computed on the calendar year basis in accordance with the state laws regulating insurance companies." *S. of I.*, 1949, pp. 459 and 465. I have discovered no other instance in which the reporting requirements of the income tax specifically limit the freedom to file fiscal-year returns.

explains why the percentage for the Insurance carriers subgroup (line 64 of Table 9) is the lowest shown for any class.

The 1949 ratio for the Manufacturing division, 40.2 per cent, is several points above that for all industrial groups combined, 36.0 per cent. Of the twenty groups within the Manufacturing division, the following thirteen have ratios above the over-all figure of 36.0:

18. Apparel and products made from fabrics	54.1
26. Leather and products	50.7
17. Textile-mill products	46.5
20. Furniture and fixtures	43.1
36. Other manufacturing	42.5
31. Electrical machinery and equipment	42.0
15. Food and kindred products	41.8
19. Lumber and wood products; except furniture	39.6
32. Transportation equipment, except motor vehicles	39.6
33. Motor vehicles and equipment, except electrical	39.3
23. Chemicals and allied products	36.8
25. Rubber products	36.5
30. Machinery, except transportation equipment and electrical	36.4

Thus, the majority of the groups in this division in 1949 filed a greater fraction of the total number of returns on a fiscal-year basis than the corresponding fraction (36.0 per cent) for the entire corporate system. The remaining seven groups had percentages below the over-all average, with the lowest, for Tobacco manufactures, at 23.8.

In two groups, Apparel and Leather, more than half the 1949 returns were filed on a fiscal-year basis. Conceivably, the exceptionally high percentages for these two groups—and perhaps also for certain other groups showing figures not far below 50 per cent—reflect strong seasonal influences which tend to encourage use of an accounting period other than the calendar year. Such seasonal influences may be incident to the nature of the raw material, the particular manufacturing processes used, the selling customs of the business, or the seasonal pattern of the distributors or other purchasers of the products manufactured. Contrariwise, one may suspect that the groups showing exceptionally low percentages—Tobacco, Stone, Printing, and Paper—are much less subject to seasonal influences, either in their own operations or in their relations with their customers. A careful study of the specific seasonal variations involved, however, is likely to be obstructed by the fact, already noted, that a particular group in the industrial classification of corporations is not precisely limited to a narrow line of industry. All we can do at this stage is to suggest that seasonal factors may to an important degree account for the wide variation among the percentages for the twenty groups in the Manufacturing division.

The 1949 ratio for the Trade division, 41.4 per cent, is also above the over-all figure of 36.0 per cent. This is true for each of the three groups within the division: Wholesale, Retail, and Trade not allocable (this last does not pertain to any identifiable branch of trade). The fact that the percentage for the Wholesale group, 43.7, stands above that for the Retail group, 39.9, may appear somewhat surprising. I can offer no confident explanation for this, but venture a hesitant suggestion that those distribution lines for which seasonal factors are of minor importance bulk larger, in terms of number of corporations, in retailing than in wholesaling. Some part of the result may arise also from differ-

ences in specialization between the wholesale trade and the corresponding retail trade. For example, a typical retail food store might be expected to have only moderate seasonal variation in sales, and certain commodities handled by the store would presumably show little such variation. In the relevant wholesale trades, however, the situation might be very different because of specialization. A wholesale dealer in produce may have a very sharp seasonal factor—a much more intense seasonal factor than that affecting the food retailers who purchase from him. Finally, some lines of wholesale trade may have no significant counterpart in the retail trade, for example, jobbers and manufacturers' agents handling machinery and industrial raw materials, and any other wholesalers dealing in commodities sold mainly only in wholesale lots. Insofar as such lines are affected by seasonal factors, they might contribute to the higher percentage found above for the wholesale group.

Among the nine subgroups within the Retail group, all but three have percentages above the over-all figure for the entire corporate system, as follows:

49. Apparel and accessories	56.3
48. General merchandise	45.8
55. Other retail trade	45.4
50. Furniture and house furnishings	43.2
53. Eating and drinking places	38.0
47. Food	37.6

The first of these subgroups, Apparel and accessories, has a higher percentage than the highest found for any group in the Manufacturing division—54.1 for the Apparel group—and higher in fact than that for any other class shown in Table 9. One can easily assume that the intense seasonal variation in the type of distribution activity occurring in this subgroup is a major factor in explaining the very high figure. The same can probably be said of General merchandise, for Department stores, one of the largest subsubgroups, in terms of number of corporations, within that subgroup, may be subject to seasonal fluctuations of the same general nature as those affecting the apparel stores.<sup>19</sup> One may, however, question whether seasonal factors are an important cause of fiscal-year reporting for such subgroups as Eating and drinking places and Food, which have percentages only slightly above the over-all average.

The figure for the Services division, 37.9, is not much above the over-all average. Within the division, however, the following three groups have percentages well above that average:

74. Motion pictures	41.8
69. Hotels and other lodging places	41.2
75. Amusement, except motion pictures	39.7

In each of these lines, considerable seasonal factors may affect many of the corporations included. Significant seasonal factors may be present in two other groups: Automotive repair services (which includes filling stations), and Other services (which includes schools); the percentages for these two groups stand

<sup>19</sup> See data on number of returns for the subsubgroups in *S. of I.*, 1949, pp. 76-77.

slightly above the over-all average, and considerably above the three groups (numbers 70, 71, and 73) not heretofore mentioned.

10. *Industrial differences in fiscal-year reporting: total assets.* In the *Statistics of Income* table showing fiscal-year data for balance-sheet returns, the only figure shown for each line of industry, besides number of returns, is the accounting item total assets. As total assets is a much better indicator of importance than mere number of returns, and is in fact the best general-purpose measure of importance, we examine now the portion of the aggregate total assets reported on all balance-sheet returns in each line of industry that was reported on fiscal-year returns.

Although percentages for 1946 have been computed and examined, only those for 1949 are presented here. The 1946-1949 change in the total-assets percentage for most lines of industry showed advances, only ten lines showing declines, whereas the number-of-returns percentages advanced for all lines. But even when the percentages on both bases advanced, the advances usually differed in degree. The manufacturing group Electrical machinery and equipment showed the following changes between 1946 and 1949:

	1946	1949
In terms of number	34.0	42.0
In terms of total assets	11.8	10.2

In this case, average total assets reported per fiscal-year return declined, while it rose for other returns. In some other case, of course, the diversity of change in average total assets might not be so marked, but it would still lead to differences between the percentages.<sup>20</sup>

Our primary interest attaches, however, to differences in the percentage among classes; here also remarks are confined to the figures for 1949 (see Table 9, column c). For the eight broad divisions, the 1949 percentages are:

2. Agriculture	37.9	37. Public utilities	1.8
6. Mining	15.4	42. Trade	46.3
12. Construction	33.9	57. Finance	5.3
13. Manufacturing	23.3	68. Services	40.5

<sup>20</sup> For the Electrical group, both number of returns and total assets increased from 1946 to 1949, for both fiscal-year and other returns. But the average total assets per return changed as follows (in thousands of dollars):

	1946	1949
Fiscal year returns	656	487
Other returns	2,584	3,096

The net increases in the number of returns arise from: newly chartered corporations which became active during the three year period, *minus* corporations which had been active in 1946 but were dissolved or became inactive by 1949, *plus* corporations which were shifted into this group by changed classification as to line of industry, *minus* corporations similarly shifted out of the group, *plus* any net change arising from changes in the filing of consolidated returns. The net increases in total assets represent not only (1) changes in total assets reflecting the above changes in the corporations included in the group's list, but also (2) the net change between 1946 and 1949 of the aggregate total assets of those corporations which were in the list in both years (such change in total assets, for an identical corporation, can be substantial, of course, over a three-year period and can be either an increase or a decrease). Even if no changes occurred in the list—if the lists of corporations were identical in 1946 and 1949—changes in the total assets of the various corporations in the list might have been such that the average total assets per return for fiscal-year corporations declined whereas that for other returns rose. In this case, if the number-of-returns percentage rose from 1946 to 1949, the total-assets percentage would have risen less or might even have declined.

Here the variation around the over-all average of 13.2 for the entire corporate system is much wider than the variation of number-of-returns percentages. For two divisions, Public utilities and Finance, the figures run far below the over-all average. The Mining percentage is only moderately above the over-all figure. An almost negligible percentage of the total assets in Public utilities is reported on fiscal-year returns, whereas in Trade nearly half is reported on fiscal-year returns. This wide variation can be found also among the group percentages in several divisions: the range is from 3.2 to 20.8 among the groups in Mining, from 8.4 to 64.8 among the groups in Manufacturing, from 0.0 to 37.4 among the groups in Finance, from 25.5 to 53.7 among the groups in Services; and the range is from 24.3 to 71.3 among the subgroups of the Retail group in Trade.

The basic reason why these comparisons differ so strikingly from those in terms of number of returns is the contrast between fiscal-year returns and other returns in average total assets per return. We may illustrate by citing 1949 figures for the groups Tobacco and Leather in the Manufacturing division and the subgroup Commission merchants in the Wholesale group under Trade. For Tobacco, the number-of-returns percentage is far above the total-assets percentage, and average total assets is much smaller for fiscal-year than for other returns. For Leather, the number-of-returns percentage is sharply below the total-assets percentage, and average total assets is much higher for fiscal-year than for other returns. For Commission merchants, the two percentages are almost exactly equal, and average total assets is almost the same for fiscal-year and other returns. Such slight differences as do exist between the percentages and between the averages are in the same directions as found for Leather.<sup>21</sup>

This matter of differences in average total assets per return between fiscal-year and other returns is tied up with the question of variations in fiscal-year reporting according to size of corporation. Detailed discussion of the matter is postponed until Part III, where the size variations are examined. There also some attempt is made to explain these facts in more meaningful terms than the mere citation of the arithmetical facts. For the purpose of the present discussion, we need merely note that these arithmetical facts do account for differences between number-of-returns and total-assets percentages shown for 1949 in Table 9. If this consideration is borne in mind, one may interpret differences among the various total-assets percentages of Table 9 along the same lines—with heavy emphasis on seasonal factors—used in interpreting corresponding differences among the number-of-returns percentages. Therefore, such interpretations are not now repeated.

11. *Industrial differences in fiscal-year reporting: number of income-tax returns.* If industrial differences in the tendency to report on a fiscal-year basis

<sup>21</sup> The supporting figures are as follows:

	Fiscal Year Percentage in Terms of:		Average Total Assets (thous. \$):	
	Number of Returns	Total Assets	Fiscal-Year Returns	Other Returns
16. Tobacco manufactures	23.8	8.4	4,727.2	16,003.3
26. Leather and products	50.7	64.8	607.8	339.4
44. Commission merchants	42.1	42.2	167.7	167.2

are considered in terms of the number of all income-tax returns—both balance-sheet and non-balance-sheet—in nearly all lines of industry the percentages are somewhat smaller than those for balance-sheet returns shown in column b of Table 9. Moreover, although the special balance-sheet tabulations of fiscal-year returns classified by line of industry are available only for the years 1946–1949, the corresponding tabulations for all returns not only exist for those years but can be compared—so far as number of returns is concerned—with a roughly corresponding industrial breakdown for 1939 and a considerably less detailed breakdown for 1934.

The industrial classification used in *Statistics of Income* for 1934–1937 was much less detailed than that used for 1938 and later years. Furthermore, even though certain 1934 classes bear approximately identical names as those applied to corresponding classes in 1938 and later years, exact comparability does not exist. The extensive revision in 1938, which attempted to put the *Statistics of Income* classification as nearly as possible in line with the Standard Industrial Classification of the Division of Statistical Standards of the Bureau of the Budget, involved certain shifts of minor industrial groups from one major group to another.<sup>22</sup> In the main the “major groups”—the industrial divisions, groups, and subgroups such as are listed in Table 9—were not seriously distorted by these shifts; but some distortion did occur in certain cases, and comparisons between 1934 and later years must accordingly be made with some reservations.<sup>23</sup>

The fiscal-year percentages based on all income-tax returns have been calculated and examined for the years 1934, 1939, 1946, and 1949, for each of the classes of Table 9 for which data are available, but the figures are not presented here. The classes as specified for 1939 are fairly closely comparable with those in 1946 and 1949, but, as indicated above, certain classes shown for 1934 are only roughly comparable with those of the three other years.<sup>24</sup> Without excep-

<sup>22</sup> See *S. of I.*, 1938, pp. 6–7 and 241–273.

<sup>23</sup> The effect of these shifts on the major groups can be inferred from *S. of I.*, 1938, pp. 223–228, in comparison with relevant figures on pp. 90–103 and pp. 104–116. For example, the Mining and quarrying division classified for 1938 on the old basis (p. 223) and on the new basis (pp. 90 and 104) shows the following:

	Old Basis	New Basis
Returns with net income:		
Number of returns	4,470	3,391
Net income (thous. \$)	210,354	199,621
Returns with no net income:		
Number of returns	8,699	7,551
Deficit (thous. \$)	161,041	152,440
Corresponding figures for the Chemicals group in Manufacturing are:		
	Old Basis	New Basis
Returns with net income:		
Number of returns	2,732	2,799
Net income (thous. \$)	336,390	339,112
Returns with no net income:		
Number of returns	3,890	4,002
Deficit (thous. \$)	27,606	30,727

<sup>24</sup> After the major revision of 1938 in the industrial classification, a small number of minor revisions were made in certain later years, especially in 1948. Particular attention is called to the changes of 1940—see *S. of I.*, 1940, p. 310, and *S. of I.*, 1941, pp. 300–303. Changes in other years since 1938 are described in *S. of I.* as follows: 1939, none; 1941, pp. 300–303; 1942, pp. 7–8; 1943, p. 5; 1944–1947, none; 1948, pp. 425–450; 1949, p. 4; and 1950, none.

tion, the 1949 figure is higher than the 1946 figure, for every industrial class; and for some classes the 1946-1949 rise is very sharp. For every class for which the 1939 figure is available, except Forestry (4), the 1946 figure is above that for 1939. For every class for which the 1934 figure is available, the 1939 figure is above that for 1934. These findings emphatically support our general conclusion that from 1934 to 1949 the extension in the practice of fiscal-year reporting was very rapid and was widespread among all lines of industry. Differences among lines of industry, in any of the four years, can largely be explained in terms of seasonal factors and the role of regulatory authorities, as suggested above in Section 9, and such discussion is not repeated here.

12. *Industrial differences in fiscal-year reporting: net income or deficit.* In Section 3 attention was called to serious defects in net income (or deficit) as a measure of importance in comparing fiscal-year returns with all returns. These defects are likely to distort not only the indicated change in the fiscal-year percentage from one year to another, but also comparisons of such percentages among industrial classes in any one year. Nevertheless, in columns d-f of Table 9 the 1949 percentage of net income (or deficit) shown on fiscal-year returns is presented for each industrial class and for each of three categories: returns showing net income, returns showing no net income, and the combination of these two categories. The results are presented partly to provide the basis for pointing out and explaining some of the peculiarities in the way cyclical variations may influence not only different lines of industry but also fiscal-year returns as compared with other returns and partly because emphasis on net income, for the corporate system as a whole and for various lines of industry, may have particular significance for those specialists concerned with the tax implications of fiscal-year reporting.

A first point to be noted is that, for any class, the ratio for the net category falls between those for the deficit and combined categories.<sup>25</sup> We must bear in mind that 1949 was a year of moderate prosperity, despite the mild recession from 1948. The net income of net-income corporations exceeded, and for most lines of industry greatly exceeded, the deficit of no-net-income corporations. In almost every instance, the deficit category is a minor element in the class, and the net category makes up the bulk of the class. Hence, the deficit percentage cannot be relied upon as fairly typical of the class as a whole, whereas, in most instances, the net percentage indicates the fiscal-year share for most corporations of the class.

One might at once suggest that the combined percentage truly represents all corporations of the class and should therefore be taken as the measure of comparative importance of fiscal-year reporting—among the industrial classes in 1949—in terms of net income. But we should not forget that the combined net income—whether for fiscal-year returns or for all returns of any class—is a residual figure, obtained by subtracting the deficit of no-net-income corpora-

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<sup>25</sup> This is algebraically necessary in a year such as 1949 in which, for any one of the industrial classes, the deficit of all no-net-income corporations is smaller numerically than the net income of all net-income corporations—in other words, the combined category has a positive net income. (The situation would be altered, for many industrial classes, in a year of deep depression such as 1932.)

tions from the net income of net-income corporations. Such residual figures, when used to derive ratios, can yield somewhat weird results. An outstanding example of this appears in the 1949 result for the Nature-of-business-not-allocable division. Here the combined percentage is over 180, and this implies that the fiscal-year returns were, in terms of net income, 180 per cent of all returns of this class. This in turn implies that the non-fiscal-year returns were *minus* 80 per cent of all returns. Yet we know from Table 9 that about 70 per cent of the returns, by number, were non-fiscal-year returns, and that over 73 per cent of total assets was reported on non-fiscal-year returns.<sup>26</sup> Although the 180 per cent is numerically valid, and the inference that the fiscal-year returns show a combined net income 180 per cent of that for all returns is literally correct, it seems somewhat ridiculous as an estimate of the importance of fiscal-year reporting in this class for 1949, unless we interpret importance in a very narrow sense. No other figure in the Combined column of Table 9 is so extreme as this case, but for various other classes shown in the table, the combined figure may be influenced to a lesser extent by the same type of circumstance. Any combined percentage which is "unduly" high or low may be suspect on these grounds, and even those which are not may nevertheless be misleading because of their status as ratios of residuals.

This does not mean that these combined percentages have no significance, particularly in studying specific aspects of fiscal-year reporting; but it does mean that they are not a simple guide to appraising the importance of fiscal-year reporting, as between two years, or as among lines of industry. It also means that these combined ratios should not be expected to tally with corresponding ratios in terms of number of returns, or in terms of that more dependable measure of importance, total assets.

Particularly in studying certain tax implications of fiscal-year reporting, the net percentages of net-income corporations may have significance. Corresponding figures for 1946 have been calculated but are not presented in tabular form. Nearly half of the classes show declines in the net percentage from 1946 to 1949, whereas the corresponding figures in terms of number of returns showed no declines.<sup>27</sup>

That the changes in net percentage from 1946 to 1949 can be different, for various classes, from those based upon number of returns can at least be explained in numerical terms. Consider, for example, the Manufacturing division: the net percentage declines from 28.8 in 1946 to 21.9 in 1949. The appropriate number-of-returns percentages, which pertain only to the net category and are

<sup>26</sup> The findings shown in Table 9 for this class are explained as follows (dollars in thousands):

	All Returns	Fiscal- Year Returns	Per Cent Fiscal Year
Net income, net returns	9,420	5,621	59.7
Deficit, no-net returns	7,586	2,210	30.5
Net income, combined	1,834	3,311	180.5

One may call it a mere "accident," but the figures for deficit and for net income happen to be so related that the residual figure—net income, combined—is much larger for fiscal-year than for all returns.

<sup>27</sup> Figures in columns a and b of Table 9 refer to both net and no-net corporations combined, whereas column d pertains only to the net-income category.

not those of Table 9, show a 1946-1949 rise from 31.7 to 39.1. How do we account for this? The basic figures show that the number of fiscal-year returns rose, whereas the number of all returns declined; hence the number-of-returns percentage rose. The net income of fiscal-year returns declined, whereas the net income of all returns rose; hence the net-income percentage declined.<sup>28</sup>

In the Manufacturing division, the average net income per fiscal-year return declined, whereas that for all returns rose; and, of course, the average for the non-fiscal-year returns rose even more sharply. Why did the total net income on fiscal-year returns, as well as the average per return, decline, whereas corresponding figures for all returns—and still more so for other returns—rose? One important contributing cause was probably the fact that the mild industrial recession of 1949 had a specially heavy impact on various lines of manufacturing industry which tend strongly to file fiscal-year returns, and less impact or none at all on those lines in which fiscal-year reporting is not very common. Or, the peculiar adversities of 1946 may have hit with special force those manufacturing lines in which fiscal-year reporting was not very common. Even within any particular line of manufacturing, the impact of cyclical changes in business may vary greatly among corporations, and by chance those feeling the heavier impact might in the main be filing fiscal-year returns. The truth is that net income (or deficit) fluctuates widely and irregularly, and mere chance might result in a very different showing for fiscal-year returns than for other returns. In any case, I see no reason to suspect that fiscal-year reporting would, in any year chosen at random, be more (or less) likely to be practiced by corporations having high net incomes than by those having low net incomes or deficits.

The Deficit percentage for the Manufacturing division rose from 31.6 in 1946 to 39.5 in 1949, whereas the number-of-returns percentage rose only from 33.1 to 38.6. The key averages (in thousands of dollars) are:

	1946	1949
Average deficit per return:		
Fiscal-year	36.9	22.8
All	38.6	22.4

Very large increases occurred in the number of no-net-income returns and in the amount of deficit—for both fiscal-year and all returns. On the other hand, the average deficit per return declined, but less sharply for fiscal-year than for all returns; this explains why the Deficit percentage for the division rose more sharply than the number-of-returns percentage. A notable fact is that, for the non-fiscal-year returns, the aggregate deficit declined, despite a large increase in the number of returns.

<sup>28</sup> Actually a difference in direction of 1946-1949 movement between the number-of-returns and the net-income percentages could occur without the basic figures showing such drastically diverse movements as in the case of the Manufacturing division. In fact, the ratio of the 1949 net percentage to that for 1946 is derivable from the ratio of the 1949 number-of-returns percentage to that for 1946 by reference to 1949-1946 ratios of average net income per return, for fiscal-year and for all returns, by use of an algebraic formula. The key to the diverse 1946-1949 movements of the two percentages is thus the relation among the four average-net-income figures. These, in the Manufacturing case, are (in thousands of dollars):

	1946	1949
Average net income per return:		
Fiscal-year	158.7	125.5
All	174.7	224.6

The combined percentage for the Manufacturing division declined from 28.5 to 20.5, whereas the number-of-returns percentage (Table 9) rose from 32.1 to 38.9. The key averages (in thousands of dollars) are:

Average net income per return:	1946	1949
Fiscal-year	106.1	64.0
All	119.2	121.5

Again, the difference in direction of movement between the net-income percentage and the number-of-returns percentage can be explained by the relative changes in the average net income per fiscal-year return and for all returns.<sup>29</sup>

Although these percentages have little value in appraising the comparative importance of fiscal-year reporting, either as between two years or as among lines of industry, they may have high significance for certain specific purposes. Thus, the net percentages may be very informing for the study of tax implications of fiscal-year reporting (further attention is given to this point in Section 15). Likewise, the combined percentages may be highly useful in studies of cyclical fluctuations in corporate profits, whenever such studies must give careful attention to the differences in dating of corporate accounting years.

13. *Monthly distribution of accounting years by line of industry: number of returns.* In Sections 5 and 6 the monthly distribution of accounting years for the entire corporate system, regardless of line of industry, was examined in terms of number of returns and of specified accounting items. In Section 7 these results were used to estimate the deviation of the center of the average year from July 1 for the entire list of returns whatever their specific accounting years. That analysis showed that, for the corporate system as a whole, even after the great extension in the use of fiscal-year reporting which had developed by 1949, the center of the average year did not deviate more than a few days from July 1. But the dispersion of the various accounting years about their average was found to be large enough so that the average year might not be sufficiently typical for some purposes of interpretation. And I remarked that the deviation of the center of the average year from July 1 might prove much more considerable for some lines of industry than for the corporate system as a whole. We now examine evidence on this last point, bearing in mind that such evidence may be informative for certain other purposes also.

The formidable task of carrying out a monthly analysis for every division, group, and subgroup of industry listed in Table 9 did not appear feasible. Moreover, for numerous groups and subgroups, fiscal-year reporting is of such small importance that no worthwhile results can be expected from a monthly analysis. Accordingly, the analysis actually carried out was confined to a limited list of industrial classes; of these a still smaller list is reported here,

<sup>29</sup> The various averages of net income or deficit shown for the net, deficit, and (to a smaller extent) combined categories in the text are not highly typical: any particular average does not necessarily reflect the approximate situation for a considerable fraction of all corporations covered by the average. The reason is that the size distribution of net income (or deficit) tends to be extremely J-shaped, rather than bell-shaped: a very large number of corporations have net income (or deficit) only slightly different from zero, whereas a very few corporations may show extremely high figures. In these circumstances, the average is likely to fall at a point in the size scale near which only a moderate number of specific corporations fall. Nevertheless, for the purpose served by the averages in the analysis in the text, the averages are entirely valid.

determined as follows. Each of the eight broad divisions was included in the list: Agriculture, Mining and quarrying, Construction, Manufacturing, Public utilities, Trade, Finance, and Services, and also the Not-allocable division. Next, the 1949 figure for total assets, combining the net and no-net categories as tabulated in *Statistics of Income*, was found for each of the eleven fiscal years (July to November 1949, and January to June 1950) for each of the sixty-seven groups and subgroups covered by the 1949 tabulations. For each such group or subgroup the total assets for all balance-sheet returns, regardless of accounting period, was also determined, and 20 per cent of this total was taken as the critical figure. A particular group or subgroup showing in at least one of the fiscal-year months a total-assets figure above this critical figure qualified for the selected list. The five groups and subgroups thus selected were (with numerals as in *Statistics of Income*, 1949, pages 16-17):

In the Manufacturing division:  
26. Leather and products

In the Trade division:  
46. Retail group  
48. General merchandise  
49. Apparel and accessories

In the Services division:  
74. Motion pictures

Food stores, a subgroup in the Retail group, were also included because they yield a particularly high deviation figure.

For each of the various divisions and of the selected groups and sub-groups, the monthly distribution can then be determined by the method used for Table 4, except that in the present cases no separate figures are available for part-year returns. The December figure shown in the tables of this and following sections includes therefore not only the calendar-year but also the part-year returns, but the part-year returns presumably account in any instance for only a small portion of the December figure. Monthly distributions can be worked out not only in terms of number of returns, as in the present section, but also in terms of those accounting items for which fiscal-year data are available in *Statistics of Income*, as in Sections 14-16. For any monthly distribution the deviation of the center of the average year from July 1 can be calculated by the method used for Table 8. It is stated in months (or fractions of a month), measured positively if the center of the average year follows July 1.

The analysis in this section is confined to distributions in terms of number of returns, and covers all returns, whether or not accompanied by balance sheets, for each specified industrial class. While the main bodies of statistics analyzed in this and following sections are available only for the years 1946-1949, some roughly comparable statistics in terms of number of returns, particularly for the broad divisions, are available and have been examined for 1934 and 1939, but they are not reported here. Comparisons between 1946 and 1949 seem likely to be almost entirely free from distortion on account of changes in industrial classification.<sup>30</sup>

First examining each division in Table 10 separately, we find that in the

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<sup>30</sup> See Section 11, and especially footnotes 8-10.

interval 1946-1949 the figure for each fiscal-year month rises and the December figure declines. The great extension in the use of fiscal-year reporting in recent years not only affected all divisions, but it also had a fairly uniform impact upon all of the fiscal-year periods. In comparing the pattern of the monthly

TABLE 10

PERCENTAGE DISTRIBUTION BY FILING PERIOD OF NUMBER OF RETURNS IN EIGHT BROAD INDUSTRIAL DIVISIONS, 1946 AND 1949, AND DEVIATION OF CENTER OF AVERAGE YEAR FROM JULY 1

Year Ending	Agriculture		Mining and Quarrying	
	1946	1949	1946	1949
July	2.96	3.77	2.18	2.61
August	2.36	3.36	1.69	2.04
September	1.95	2.85	1.65	2.83
October	1.79	2.41	1.63	2.26
November	0.96	1.46	1.59	1.69
December <sup>a</sup>	66.64	59.16	77.99	70.36
January	1.25	1.65	0.82	1.05
February	2.75	3.07	1.24	2.09
March	4.01	5.02	2.71	4.11
April	2.87	3.52	2.44	2.83
May	3.36	3.72	1.56	2.26
June	9.32	10.01	4.50	5.86
Deviation from July 1 (months)	0.68	0.69	0.30	0.41
Year Ending	Construction		Manufacturing	
	1946	1949	1946	1949
July	1.05	2.06	1.84	2.70
August	1.19	2.02	2.00	2.87
September	1.87	3.66	2.69	4.34
October	1.45	2.23	2.57	3.37
November	1.09	1.63	2.79	2.95
December <sup>a</sup>	76.22	65.27	67.95	61.08
January	1.89	2.51	2.18	2.37
February	2.64	3.17	2.09	2.40
March	4.06	6.12	3.63	4.41
April	2.51	3.20	2.97	3.19
May	1.90	2.45	2.91	3.10
June	4.13	5.68	6.38	7.22
Deviation from July 1 (months)	0.44	0.51	0.49	0.46
Year Ending	Public Utilities		Trade	
	1946	1949	1946	1949
July	1.24	1.60	2.08	2.98
August	1.13	1.46	2.13	3.04
September	1.62	2.44	2.60	4.07
October	1.23	1.56	2.31	3.05
November	0.94	1.08	2.02	2.24
December <sup>a</sup>	83.59	79.47	67.53	60.59
January	0.76	0.96	4.20	4.48
February	1.13	1.36	2.39	2.73
March	1.60	2.42	3.27	4.10
April	1.41	1.75	2.77	3.03
May	1.69	1.76	2.86	3.03
June	3.87	4.14	5.84	6.64
Deviation from July 1 (months)	0.25	0.26	0.46	0.42

TABLE 10—(continued)

Year Ending	Finance		Services	
	1946	1949	1946	1949
July	1.37	1.83	1.78	2.21
August	1.56	2.08	3.11	3.18
September	2.15	2.94	3.44	4.39
October	1.73	2.15	2.70	3.03
November	1.30	1.57	2.21	2.24
December <sup>a</sup>	80.41	74.55	69.71	65.23
January	1.23	1.54	1.49	1.77
February	1.29	1.71	2.03	2.27
March	2.04	2.67	3.17	4.15
April	1.99	2.57	2.95	3.86
May	1.71	2.20	2.46	2.66
June	3.22	4.20	4.95	5.51
Deviation from July 1 (months)	0.21	0.25	0.30	0.33

<sup>a</sup> Includes calendar-year and all part-year returns.

distribution among divisions, attention may be confined to 1949 figures. The terminal months for the four fiscal years showing the two highest and two lowest percentages, for each division, are:

	Highest	Next to Highest	Next to Lowest	Lowest
Agriculture	June	March	January	November
Mining	June	March	November	January
Construction	March	June	August	November
Manufacturing	June	March	February	January
Public utilities	June	September	November	January
Trade	June	January	February	November
Finance	June	September	November	January
Services	June	September	July	January

For all but one division, June is the highest month: fiscal years ending in June are more common than any of the other ten fiscal-year periods. For five divisions, January is the lowest month, while November is lowest for the three other divisions. But the considerable scatter of the next-to-highest and next-to-lowest figures among the various months implies that the details of the monthly pattern vary considerably among the divisions. The predominance of June as the high terminal month, and of January as the low, should not be allowed to obscure this basic variation among the divisions. It will be even more apparent when figures in terms of some other measure than number of returns are studied in later sections, and even in terms of number of returns more striking variation will be found among the industrial groups and subgroups.

The length of time by which the center of the average year follows July 1 increases from 1946 to 1949, for all divisions except Manufacturing, and Trade. The 1949 deviations range from 0.25 month for Finance to 0.69 month for Agriculture, or from about eight to about twenty-one days. Hence, even with fiscal-year reporting advanced to its 1949 stage, the center of the average year did not for any division fall more than twenty-one days after July 1; this deviation is, for most analytical purposes, probably negligible.<sup>31</sup>

<sup>31</sup> Some error may affect the reckoning of the center of the average year because of the way the part-year returns are treated. See Section 7 and also Appendix C.

We turn now to corresponding figures for the six groups and subgroups of the selected list, which appear in Table 11. Although frequent exceptions appear, study of each group and subgroup separately leads to the same broad conclusion as Table 10: the percentage for each of the eleven fiscal-year months rose from 1946 to 1949. Correspondingly, the figure for December declined in each of the six classes. As in Table 10, the percentages in this table indicate that the recent increase in fiscal-year reporting was widespread among various lines of industry and affected each of the fiscal-year periods for every class examined.

We can again get a rough picture of the monthly pattern of reporting for the various industries by listing the two highest and two lowest terminal months for each class in 1949:

	Highest	Next to Highest	Next to Lowest	Lowest
Leather and products	November	June	July	February
Retail group	June	January	May	November
Food stores	June	March	January	November
General merchandise	January	June	October	November
Apparel stores	January	July	May	November
Motion pictures	August	June	November	January

Two of the six classes have January and two have June as the high terminal month. For four of the six classes, November is the low terminal month. But again, examination of the next-to-highest and next-to-lowest terminal months reveals wide diversity; and this fact, coupled with the detailed differences revealed by the 1949 figures in Table 11, emphasizes the diversity in shape of the monthly pattern among the six classes. More emphatic evidence on this point will be set forth in later sections.

Examination of the deviation-from-July 1 figures for each of the six classes shows, with two exceptions, a general tendency for the center of the average year to fall later with passing time. We may note a single instance of a negative deviation: for Motion pictures in 1946, the center of the average year fell 0.04 month before July 1—about one day before July 1. The highest 1949 deviation is the 0.44 month and the highest 1946 deviation is the 0.55 month, both for Leather and products. These represent about 13 and 17 days, respectively. So far as these six classes are concerned, and with the center of the average year determined in terms of number of returns, we can conclude that the deviations from July 1 are probably negligible for most analytical purposes.

Thus far in this section the number-of-returns analysis has been with reference to all returns, whether or not accompanied by balance sheets. When number-of-returns percentages are calculated for the balance-sheet returns alone, for nearly all industrial classes the percentage of the total number of returns filed as fiscal-year returns is somewhat higher.<sup>32</sup> This slight excess is, in most classes, fairly evenly distributed among the fiscal-year periods. Hence the shape of the monthly pattern, in terms of number of returns, is about the same in both cases, with a few slight disparities.

<sup>32</sup> Such calculations have been carried out for all industrial divisions, and the six selected classes; the results, though not presented herein, provide the basis for certain remarks in the text.

TABLE 11

PERCENTAGE DISTRIBUTION BY FILING PERIOD OF NUMBER OF RETURNS IN SIX SELECTED INDUSTRIAL CLASSES, 1946 AND 1949, AND DEVIATION OF CENTER OF AVERAGE YEAR FROM JULY 1

Year Ending	Leather and Products (26)		Retail Group (46)	
	1946	1949	1946	1949
July	1.66	2.54	2.23	2.99
August	1.77	3.22	2.18	2.84
September	3.15	4.46	2.63	3.87
October	4.96	6.10	2.25	2.82
November	7.75	7.85	1.73	1.82
December <sup>a</sup>	56.42	50.46	68.83	62.33
January	3.26	3.26	5.51	5.71
February	2.48	2.33	2.23	2.69
March	3.04	3.74	2.95	3.89
April	4.11	3.70	2.32	2.69
May	4.21	4.56	2.26	2.46
June	7.19	7.78	4.88	5.89
Deviation from July 1 (months)	0.55	0.44	0.35	0.37
Year Ending	Food Stores (47)		General Merchandise (48)	
	1946	1949	1946	1949
July	1.44	2.11	2.46	3.28
August	2.40	2.80	2.17	2.26
September	3.39	4.36	0.86	2.09
October	2.26	2.98	0.81	1.33
November	1.24	1.70	0.97	0.94
December <sup>a</sup>	72.80	65.49	62.30	56.79
January	1.55	1.73	21.45	20.45
February	2.06	2.47	1.58	2.20
March	3.14	4.52	1.26	2.47
April	2.74	3.35	0.93	1.49
May	2.55	2.60	1.22	1.63
June	4.43	5.88	3.99	5.07
Deviation from July 1 (months)	0.33	0.39	0.36	0.41
Year Ending	Apparel and Accessories (49)		Motion Pictures (74)	
	1946	1949	1946	1949
July	5.51	7.39	1.92	2.32
August	3.40	3.95	9.12	7.24
September	2.44	3.31	4.11	4.89
October	2.78	2.39	2.38	2.82
November	1.70	1.53	1.33	2.06
December <sup>a</sup>	52.46	46.10	66.39	59.84
January	15.43	17.23	1.00	1.63
February	4.02	4.29	1.66	2.75
March	3.28	3.69	2.81	4.92
April	1.93	2.18	2.55	3.24
May	1.90	1.75	2.43	2.88
June	5.15	6.20	4.30	5.41
Deviation from July 1 (months)	0.26	0.23	-0.04	0.19

<sup>a</sup> Includes calendar-year and all part-year returns.

14. *Monthly distribution of accounting years by line of industry: total assets.* Balance-sheet fiscal-year returns are tabulated in *Statistics of Income* separately for each fiscal-year month, by industrial classes, only for the years 1946-1949, and the present analysis is confined to 1949. Although figures are tabulated for number of returns and total assets, the present section is concerned only with total assets—with the percentage distribution, for any industrial class, of the total assets of that class among the various accounting periods. As in the previous section, the accounting periods covered are the eleven fiscal-year periods with terminal months July to November and January to June, and the December period, which again includes part years.

Table 12 shows the results for the eight broad industrial divisions and the six selected classes. The two highest and two lowest 1949 percentages, among the fiscal-year months, for each division, can be identified from the first eight columns of Table 12 as follows:

	Highest	Next to Highest	Next to Lowest	Lowest
Agriculture	June	March	November	January
Mining	May	August	February	January
Construction	June	March	November	August
Manufacturing	June	October	February	January
Public utilities	June	August	February	January
Trade	January	June	October	April
Finance	June	September	May	February
Services	August	June	February	January

Comparison of these results with the corresponding figures in Table 10 shows that in not a single division are the four indicated months identical for the percentages in terms of total assets and those in terms of number of returns. This and more detailed differences between the two tables may be ascribed to variations in average total assets among the groups of corporations filing for various periods.

The present list still shows June as predominantly the high month. For five divisions January is the low month, as was the case for Table 10; of these, four show February as next-to-lowest month. That January should in numerous cases be the low month, particularly in terms of number of returns, may reflect the influence of the accounting profession: efforts to reduce the peak auditing load incident to the huge number of calendar-year returns would probably steer away from a shift to a fiscal year ending in the following month when auditing work on such returns would overlap work on calendar-year returns.

Nevertheless, a major reason for choosing a particular fiscal-year period probably lies in certain seasonal characteristics of the industry involved. The accounting requirements of public regulatory bodies operate in some industrial lines to preserve the practice of calendar-year reporting. But, wherever such requirements do not control, I believe that seasonal factors are mainly responsible for the developing monthly pattern of reporting.

The deviation-from-July-1 figures show wide differences among the divisions. For the Services division, the figure is negative: the center of the average year falls one day before July 1. The highest deviation is for Agriculture: here the 0.71 month represents about twenty-two days. So far as the divisions are concerned, we conclude that the centers of the average years, in terms of total as-

TABLE 12

PERCENTAGE DISTRIBUTION BY FILING PERIOD OF TOTAL ASSETS  
TABULATED FROM BALANCE SHEETS, FOR EACH BROAD DIVISION AND  
SELECTED CLASS, 1949, AND DEVIATION OF CENTER  
OF AVERAGE YEAR FROM JULY 1

Year Ending	Agriculture	Mining & Quarrying	Construction	Manufacturing	Public Utilities	Trade	Finance
July	3.51	0.91	2.13	1.43	0.18	3.61	0.33
August	2.35	2.18	1.57	1.78	0.29	2.96	0.29
September	2.79	1.21	3.30	2.70	0.18	3.06	0.74
October	2.58	0.68	3.90	4.01	0.19	2.30	0.46
November	1.18	1.46	1.82	2.68	0.09	2.40	0.61
December <sup>a</sup>	62.11	84.57	66.11	76.72	98.16	53.74	94.68
January	1.14	0.27	2.59	0.63	0.05	14.97	0.33
February	3.00	0.61	2.53	1.03	0.06	2.71	0.22
March	4.70	2.00	5.25	1.88	0.14	3.26	0.47
April	2.75	1.59	3.30	1.40	0.10	2.26	0.46
May	3.40	0.99	2.00	1.56	0.14	2.55	0.26
June	10.49	3.53	5.50	4.18	0.43	6.17	1.15

Deviation from July 1 (months)	0.71	0.20	0.43	0.15	0.02	0.43	0.06
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Year Ending	Services	Leather and Products	Retail Group	Food Stores	General Merchandise	Apparel & Accessories	Motion Pictures
July	1.85	1.22	3.53	1.01	4.67	9.25	1.11
August	10.76	1.88	1.66	1.21	0.22	2.48	31.52
September	4.42	2.09	2.57	2.29	0.17	1.68	2.99
October	3.72	16.53	1.70	1.54	0.12	1.23	5.34
November	2.27	23.84	1.17	0.38	0.16	1.22	1.54
December <sup>a</sup>	59.50	35.24	48.71	55.16	28.72	34.14	46.49
January	1.48	1.39	27.12	1.83	64.30	37.89	0.46
February	1.62	1.23	3.42	13.24	0.36	3.91	1.01
March	3.19	1.93	2.96	9.68	0.30	2.10	1.79
April	3.59	2.30	1.72	3.12	0.12	0.88	0.85
May	2.10	2.94	1.38	0.98	0.14	0.96	1.22
June	5.50	9.41	4.06	4.56	0.72	4.25	5.68

Deviation from July 1 (months)	-0.03	0.13	0.44	0.92	0.46	0.21	-0.96
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<sup>a</sup> Includes calendar-year and all part-year returns.

sets, depart from July 1 by time intervals which are probably negligible for most analytical purposes.

The differences in the shape of the monthly pattern among the six selected industrial classes are much more striking than those among the divisions. Instead of a corresponding schedule listing the four high and low months in each class, percentages are shown for the six classes, because here the numerical magnitudes are more informative as to differences in pattern. The high and low months are determined in terms of total assets from Table 12, and the percentages are those for 1949 from Tables 11 and 12.

	High Month	Total Assets	Number of Returns	Low Month	Total Assets	Number of Returns
Leather and products	November	23.84	7.85	July	1.22	2.54
Retail group	January	27.12	5.71	November	1.17	1.82
Food stores	February	18.24	2.47	November	.38	1.70
General merchandise	January	64.30	20.45	October	.12	1.33
				April	.12	1.49
Apparel stores	January	37.89	17.23	April	.88	2.18
Motion pictures	August	31.52	4.89	January	.46	1.63

First disregarding the figures based on number of returns, we observe that the high and low months vary widely among the classes. The commonest high month is January, with three cases, all in retail trade; among the low months April and November each appear twice. In the retail trade group, General merchandise—in which department stores predominate—shows April tied with October for low place, and Apparel stores also shows April as low. This is more evidence of the striking role of seasonal factors: presumably because of the heavy Easter trade, these stores avoid a fiscal year ending at that time. The high percentages range up to a maximum of 64.30 for General merchandise, and the low percentages range from 0.12 for General merchandise to 1.22 for Leather and products.<sup>33</sup> Further evidence on the great diversity in the high and low months and in the level of the high and low percentages can of course be obtained by comparing in detail the monthly percentages in Table 12.

When we compare total-assets and number-of-returns percentages for the high and low months listed above for the six classes, we find that the total-assets percentage of the high month is higher—in several instances, very much higher—than the corresponding number-of-returns percentage. In each class the total-assets percentage of the low month is lower—in several instances, very much lower—than the corresponding number-of-returns percentage. In a sense, this is not surprising, because the high and low months have been determined from the total-assets percentages, and high and low months determined from the number-of-returns percentages have been found in general not to be the same for each industrial class as these total-assets high and low months. Nevertheless, if we examine Tables 11 and 12 separately for each class, we find in general that the total-assets high percentage is above the number-of-returns high percentage (which frequently occurs in a different month), and that the reverse is true for the low percentages. The range between high and low is generally much greater for the total-assets than for the number-of-returns percentages.

The explanation appears again to run in terms of average total assets. While for fiscal-year returns in general, the average total assets ordinarily falls below that for calendar-year returns, the average total assets for a particular fiscal-year period—which may turn out to be the high for the specific industrial class—may stand far above the general average. This may, in certain cases, be due to the fact that a few very large corporations of the class happen to choose that fiscal-year period. Similarly, for a particular fiscal-year period—which may turn out to be the low for the specific industrial class—the average total assets may fall even below the general average of that class for all fiscal-year returns. Further discussion on this point appears in Part III.

The deviation-from-July-1 figures in Table 12 range from  $-0.96$  month for Motion pictures to  $0.92$  month for Food stores—from about twenty-nine days before July 1 to about twenty-eight days after July 1. While these maximum deviations are still not very large, they are greater than those found in terms of number of returns. And a deviation of approximately one month may be large

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<sup>33</sup> The minimum of the high percentages is not cited because, as indicated in Section 13, all of these six classes except Food stores were selected on the criterion that the total-assets percentage for some fiscal-year month in 1949 must be at least 20. Except for this limitation, we might have found numerous high percentages—for example, for certain groups or subgroups in the Public utilities or Finance division—much below 20.

enough so that, for the industrial class involved, some allowance should be made in analyzing corporate data from *Statistics of Income* whenever the analysis relies heavily on the centering of the average year. I should remark also that the scatter of the figures about the center of the average year is in general greater for the specific industrial classes than for the entire corporate system, and greater in terms of total assets than in terms of number of returns. The average year is correspondingly less typical of the various accounting periods.

15. *Monthly distribution of accounting years by line of industry: net income of net-income corporations.* For certain analytical purposes, particularly in forecasting tax revenue and some other aspects of tax analysis, special attention attaches to the net income of corporations showing net income, as distinct from those showing deficits. The present section therefore describes the monthly pattern of reporting determined from figures on net income of corporations in the net category, for various lines of industry. Here, as in Sections 13 and 14, a primary purpose is to discover whether the patterns are such that the center of the average year may, for some industrial classes, depart sufficiently from July 1 to render an assumption of July 1 centering seriously invalid. The figures are presented only for 1949, and the percentages for the net category of any industrial class are obtained by dividing the net income for a particular reporting period by the total net income of the class.

Table 13 shows the percentages for each broad division and for the six selected classes. Some tendency exists for the very high and the very low months to be about the same in Table 13 as in Table 12, for any division or class. One can infer that although net income is a less stable measure of comparative importance among the fiscal-year periods than total assets, some basis exists for expecting net income to yield high or low percentages in the same months as total assets. Net income, which fluctuates greatly from year to year, may perhaps be expected to have an average level over a period of years which would yield percentages in the main consistent with those for total assets. But, in view of the varying impact with which changes in net income may hit corporations filing for different fiscal-year periods, this tendency should be expected to have no great force in any particular year, such as 1949. Moreover, we should remember that 1949 was a year of only mild recession from a high level of prosperity—a year in which the great bulk of corporations fell in the net category—and this presumably means that the net-income distribution among accounting years was exceptionally representative of all corporations, net and no-net categories combined, in 1949.<sup>34</sup>

The deviations of the center of the average year from July 1 show no wide variation among the eight divisions. The minimum is 0.03 month for Public utilities, and the maximum is 0.47 month for Agriculture—a range from about one day to about fifteen days after July 1. For 1949 we can therefore conclude that the net income figure for any division belongs to an average year with a center differing from July 1 by a time interval which is probably negligible. If

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<sup>34</sup> These comparisons of net-income percentages with those based upon number of returns and total assets might have been improved if each of the latter had been confined to the net category. But in view of the minor importance of the no-net category in 1949, these test comparisons were not made.

TABLE 13

PERCENTAGE DISTRIBUTION BY FILING PERIOD OF NET INCOME OF  
NET INCOME CORPORATIONS, FOR EACH BROAD DIVISION  
AND SELECTED CLASS, 1949, AND DEVIATION OF  
CENTER OF AVERAGE YEAR FROM JULY 1

Year Ending	Agriculture	Mining & Quarrying	Construction	Manufacturing	Public Utilities	Trade	Finance
July	4.31	1.32	1.88	1.48	0.35	3.90	0.50
August	2.26	1.49	1.24	1.76	0.44	2.59	0.60
September	1.81	1.02	3.18	2.67	0.41	3.17	1.45
October	4.65	0.57	3.71	3.37	0.30	2.60	0.83
November	0.94	2.05	1.77	2.35	0.20	1.88	0.76
December <sup>a</sup>	66.84	85.83	68.98	78.14	96.36	54.70	90.33
January	0.70	0.37	2.72	0.55	0.09	15.79	0.67
February	1.84	0.43	2.20	0.85	0.22	2.71	0.98
March	2.64	1.98	5.39	1.64	0.33	3.00	0.83
April	1.93	1.01	2.60	1.20	0.22	2.07	0.91
May	2.19	1.00	1.69	1.51	0.36	2.04	0.56
June	10.39	2.93	4.64	4.48	0.72	5.55	1.87

Deviation from July 1 (months)	0.47	0.14	0.37	0.14	0.03	0.36	0.09
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Year Ending	Services	Leather and Products	Retail Group	Food Stores	General Merchandise	Apparel & Accessories	Motion Pictures
July	1.67	2.19	3.26	0.85	3.84	11.71	0.94
August	7.26	3.34	1.49	1.01	0.15	2.40	18.89
September	3.82	1.11	2.63	2.04	0.11	1.74	2.25
October	2.28	18.23	1.44	1.25	0.08	1.37	2.32
November	2.41	21.80	0.99	0.24	0.09	1.50	1.62
December <sup>a</sup>	65.59	33.86	52.12	55.32	33.14	37.63	64.55
January	1.11	2.24	26.05	1.42	61.77	34.07	0.31
February	1.53	1.54	3.51	19.36	0.13	2.80	0.83
March	3.60	2.72	2.69	10.14	0.09	1.80	1.74
April	3.37	2.12	1.45	3.29	0.04	0.55	0.70
May	2.00	2.51	1.12	0.76	0.06	0.49	0.76
June	5.36	8.34	3.25	4.32	0.50	3.94	5.09

Deviation from July 1 (months)	0.15	-0.01	0.38	0.96	0.45	-0.04	-0.49
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<sup>a</sup> Includes calendar-year and all part-year returns.

our records included a year of deep depression, very different results for the deviation of the center of the average year based on net income might appear for the various divisions and classes. Conceivably we might then find a deviation several times as great, positively or negatively, as that shown in Table 13, for any particular division or class. And if fiscal-year reporting continues to develop, further changes in the monthly pattern might result. Hence, results for any particular year, such as 1949, cannot be trusted to indicate the maximum deviations for some other year, reckoned in terms of net income.

The deviations among the six selected classes shown in Table 13 range from -0.49 month for Motion pictures to 0.96 month for Food stores—from about fifteen days before July 1 to about thirty days after July 1. This range is much wider than that found for the broad divisions. In analyses of the class net-income figures, one may therefore not safely assume for the classes showing the

maximum (positive or negative) deviations in 1949 that the average accounting period centers on July 1. And for some other year, particularly a year of deep depression or of much higher prosperity than 1949, the deviation for one or more industrial classes might fall far outside the maximum range found for 1949. In such instances, treating the average accounting period for the class as centering at July 1 of that year would be even less, and perhaps very much less, justifiable.

To what extent considerations of this sort can be taken into account in estimating tax revenue or in other tax analyses, I do not attempt to state. But the foregoing analysis seems to indicate that any such investigations involving attention to industrial differences in net income should be carried forward, for any year, with the firm realization that these variations in the location of the center of the average accounting period introduce margins of error into the conclusions. In a year differing widely from 1949, the investigation might even need to attempt certain numerical adjustments for this departure of the center of the average accounting period from July 1.

16. *Monthly distribution of accounting periods by line of industry: net income of both categories combined.* The net income (or deficit) of both net and no-net categories combined is worthy of attention, because various analysts of financial and business conditions rely upon *Statistics of Income* compilations of profits, for the entire corporate system and for various lines of industry, in appraising past and current developments. Does the increased use of fiscal-year reporting invalidate the assumption customarily made in such analyses that the profit figure pertains to a year centering at July 1? Evidence presented in this section for 1949 suggests an answer to this important question. The basic figures for the net income (in rare cases, the deficit) for both net and no-net categories combined relate to all returns, whether or not accompanied by balance sheets.

Table 14 presents the results for each of the broad divisions and selected classes. Figures for the deviation from July 1 are not large in any division. The range is from 0.02 month for Public utilities to 0.43 month for Agriculture—from less than one day to about thirteen days after July 1. Hence the maximum departure from July 1 is small enough to warrant the conclusion that, for each of the divisions in 1949, the tabulated net income for all returns may probably be regarded as pertaining to a year centering at July 1 without serious error. For the reasons pointed out in Section 15, however, this conclusion cannot be depended upon for other years.

For the six specially selected groups and subgroups a minus percentage appears at some points—for example Leather and products, for the fiscal year ending September 1949. This merely means that, whereas the two categories combined showed a positive net income for the class as a whole, they showed a deficit for that particular fiscal-year period. Again, one should remember that the indicated monthly pattern might be very different for some other year. Changes in net income can have different impacts on groups of corporations, or on particular corporations, reporting for different fiscal-year periods, and thereby work year-to-year changes in the monthly pattern. But these different impacts can, and probably do, arise also from industrial differences among the

TABLE 14

PERCENTAGE DISTRIBUTION BY FILING PERIOD OF NET INCOME  
(OR DEFICIT) OF ALL CORPORATIONS, FOR EACH BROAD DIVISION  
AND SELECTED CLASS, 1949, AND DEVIATION OF CENTER  
OF AVERAGE YEAR FROM JULY 1

Year Ending	Agriculture	Mining & Quarrying	Construction	Manufacturing	Public Utilities	Trade	Finance
July	4.54	1.09	1.67	1.37	0.33	3.98	0.44
August	2.11	0.88	1.06	1.70	0.42	2.46	0.57
September	1.39	0.76	3.16	2.50	0.37	2.97	1.37
October	5.11	0.37	3.66	3.13	0.23	2.38	0.77
November	0.54	2.24	1.74	2.15	0.19	1.74	0.74
December <sup>a</sup>	68.07	88.41	70.40	79.49	96.84	54.58	91.06
January	0.62	0.32	2.55	0.43	0.08	16.99	0.64
February	1.50	0.23	2.09	0.76	0.20	2.65	0.96
March	2.15	1.89	5.39	1.48	0.28	2.81	0.88
April	1.61	0.86	2.41	1.09	0.16	1.96	0.83
May	1.92	0.36	1.60	1.45	0.28	1.99	0.51
June	10.54	2.60	4.27	4.44	0.62	5.50	1.43
Deviation from July 1 (months)	0.43	0.13	0.35	0.15	0.02	0.36	0.08

  

Year Ending	Services	Leather and Products	Retail Group	Food Stores	General Merchandise	Apparel & Accessories	Motion Pictures
July	1.10	2.46	3.29	0.71	13.87	13.68	0.01
August	7.99	3.90	1.33	0.92	0.11	2.15	20.97
September	3.25	-0.39	2.42	1.90	0.05	1.43	1.10
October	1.75	21.04	1.22	1.11	0.05	1.13	1.49
November	2.44	25.18	0.90	0.16	0.08	1.61	1.68
December <sup>a</sup>	67.68	27.52	51.99	54.98	33.11	38.16	66.29
January	0.92	2.28	27.67	1.40	62.23	35.17	0.22
February	1.31	1.56	3.48	20.20	0.04	2.02	0.47
March	3.41	2.67	2.50	10.45	0.02	1.14	1.29
April	3.16	1.92	1.29	3.35	-0.02	-0.13	0.38
May	1.72	2.37	0.96	0.66	0.01	0.06	0.68
June	5.27	9.48	2.95	4.16	0.45	3.59	5.42
Deviation from July 1 (months)	0.13	-0.02	0.37	1.00	0.45	-0.21	-0.49

<sup>a</sup> Includes calendar-year and all part-year returns.

fiscal-year periods. Even for classes as narrowly defined as the six shown in the table, the aggregate figure of any class is made up of figures for various subclasses. For example, the Leather and products class is made up of corporations tanning and finishing leather, those manufacturing leather footwear, and those manufacturing various other leather products. A possibility exists that the fiscal-year returns of one of these subclasses may pertain predominantly to a year ending in October, those of another to November, and those of others to other months.

The figures for deviation of the center of the average year from July 1 range from -0.49 month for Motion pictures to 1.00 month for Food stores—from about fifteen days before July 1 to thirty-one days after July 1. The second figure is one of the largest we have found thus far. A deviation of one full month, in the location of the center of the average year with reference to July

1, seems unlikely to be negligible for many purposes of careful analysis of profits data. For some other year, particularly one with cyclical conditions much more favorable or unfavorable than in 1949, the deviation for Food stores, or even for some of the classes with smaller deviations in 1949, might exceed one month by a wide margin.

Many other classes besides the six shown in Tables 11-14 have been analyzed for 1946 (and in some cases 1939) and 1949, in terms of the various criteria used in Tables 10-14, though the results are not presented here. For one particularly informing case—the manufacturing group, Transportation equipment—the deviation of the center of the average year, in terms of net income of the combined categories, is commented on here. The principal subclasses in this class are: railroad equipment, aircraft and parts, and ship- and boat-building. We must bear in mind that the postwar adjustments of 1945-1946 hit industries of this class with great force, and the impact was especially severe on the aircraft manufacturers.<sup>35</sup> The class as a whole in 1946 showed net income in the net category of \$175 million, and deficit in the no-net category of \$188 million; and for the aircraft subclass the comparable figures were \$38 million and \$156 million.

The deviation of the center of the average year in 1946 is  $-2.97$  months: the center of the average year is almost three full months before July 1. Surely this deviation is not negligible; surely one cannot assume that July 1 is the center of the average year in this case. This example clearly indicates what extreme distortions can be produced in the monthly pattern, and in the position of the center of the average year, by a wide cyclical upheaval or other violent factors affecting profit realization.

### PART III. DIFFERENCES ACCORDING TO SIZE OF CORPORATION

17. *Average total assets per return: industrial classes.* At various points in preceding sections, attention has been called to the possible effects of size differences among corporations, particularly between fiscal-year and non-fiscal-year corporations, upon the percentage ratios and patterns under study. In this and the following section, more direct attention is given to this aspect of the problem; the present section is concerned with the differences in size between fiscal-year and other returns, for the various lines of industry.

Despite the accounting and other factors which may affect it for any particular corporation, total assets appears to be unmistakably the best measure of size for comparisons among corporations or groups of corporations. The simplest comparison of size between two groups of corporations is in terms of average total assets per corporation of each group. Unfortunately, average total assets for a group of corporations—for example, those of an industrial class—is not highly typical of the various corporations included in the group. This is because of the peculiar shape of the size distribution, in terms of total assets, among the corporations of the group. This shape is marked by an enormous concentration of corporations at the low end of the size scale, with

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\* *S. of I.*, 1946, pp. 98-99.