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figures. Whether, if the necessary facts were available, some other method of adjustment could be developed which would be a substantial improvement is a question which cannot usefully be examined without raising many preliminary questions about such facts.

The above record was not extended back to 1928, on the chance that the very wide cyclical movements of that time might have led to more significant adjustments, because, as shown in Part I, fiscal-year reporting was much less common in those earlier years than in 1940-1949. Hence, even with wide cyclical fluctuations in profits, the adjustments of fiscal-year figures were unlikely to be substantial in comparison with the very large calendar-year figure, which is not subject to any adjustment. Moreover, the present appendix is aimed solely at establishing that the net-income figures as *now* tabulated, however defective they may be, cannot be significantly improved by any currently feasible adjustment.

The schedule of original and adjusted figures shows one remarkable result: The adjusted figures show smaller net changes than the original figures in the advances of 1940-1943 and 1945-1948 and in the declines of 1943-1945 and 1948-1949. This is contrary to expectation. The original figure for a year such as the 1945 low is presumably somewhat too high because it includes various fiscal years reaching back into 1944 and forward into 1946—both years of higher profits than 1945. The adjusted figure cuts down the weight of these fiscal-year constituents of the total, and might therefore be expected to show a sharper dip in 1945 than the original figure shows. The actual showing is contrary to this. A possible explanation is the wide diversity in the practice of fiscal-year reporting among lines of industry and sizes of enterprise. The profit decline to 1945, and the following recovery, could have had differential effects—as to timing and intensity—upon these classes of corporations, with the net result that our adjustment did not happen to produce the expected outcome.

APPENDIX C

PART-YEAR ACCOUNTING PERIODS AND THEIR AVERAGE CENTER

In the tabulation of *Statistics of Income* figures for any taxable year, part-year returns are included in most tables along with calendar-year and fiscal-year returns. The possible part-year accounting periods are extremely varied both as to length and as to terminal date. They may be separated into three broad groups:

1. Those falling entirely within the specified calendar year
2. Those with a length covering an odd number of months, and falling partly in the specified calendar year and partly in the preceding or following calendar year
3. Those with a length covering an even number of months, and falling partly in the specified calendar year and partly in an adjacent calendar year

All returns of group 1 are included in tabulations for the specified year. Those returns in groups 2 or 3 which have the majority of their months within the specified calendar year are included. Those returns of group 3 which have an equal number of months in the specified calendar year and in the following year are included.⁴⁵

Those periods in group 1 covering an odd number of months have their centers at the fifteenth of the central month of the period; those periods covering an even number of months have their centers at the first of a month chosen so that the period is equally divided. Examination of the whole list shows the centers of the various possible periods of group 1 as follows:

⁴⁵ The first two statements are in accord with the general rule regularly published in *S. of I.* as to the assignment of part-year returns. The third statement is in accord with a letter from an official of the Bureau of Internal Revenue's Statistical Division.

Center		Number of Periods	Center		Number of Periods
January	15	1	July	15	6
February	1	1	August	1	5
	15	2		15	5
March	1	2	September	1	4
	15	3		15	4
April	1	3	October	1	3
	15	4		15	3
May	1	4	November	1	2
	15	5		15	2
June	1	5	December	1	1
	15	6		15	1
July	1	5	Total		77

If we assume that a return in group 1 is as likely to have any one of these seventy-seven periods as any other, we can regard the most likely distribution of periods of group 1 among these seventy-seven centers, for any large number of part-year returns of this group as proportional to the above numbers. Those numbers are exactly symmetrical about July 1; hence, the average center of periods so distributed is July 1. This implies that the most probable average center of part-year periods in group 1 is July 1, but one weakness of the reasoning is that we may not have a sufficiently large number of part-year returns in this group to render the indicated distribution highly probable.

A similar analysis of the thirty periods in group 2 leads to a corresponding conclusion for that group: Their most probable average center is at July 1, but the probability is not very high. And the same may be said of the twenty periods of group 3 for which more than half the months fall within the specified calendar year.

For the remaining periods of group 3—periods covering an even number of months of which precisely half fall within the specified calendar year—no such conclusion holds. By the rule of assignment of such returns to the tabulating year, only those which overlap the end of the year are included. Those overlapping the beginning of the year are tabulated with the preceding year. The included periods (using 1949 as the taxable year) are:

August	1949–May	1950
September	1949–April	1950
October	1949–March	1950
November	1949–February	1950
December	1949–January	1950

All these periods center on January 1, 1950. This subgroup within group 3 therefore throws the probable average center of all part-year returns—including those of all three groups—somewhat later than July 1, 1949. But, this subgroup includes only five periods, whereas the other subgroup of group 3 and groups 1 and 2 include a very large number of periods (127), and probably have average centers at July 1. This deviation from July 1 is therefore very slight.

The assumption is therefore made at various points in the text that the average center of all part-year returns is at July 1. The validity of this assumption is probably not very high, and it is less likely to be high in terms of some accounting item, such as net income, than in terms of number of returns.