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THE STRUCTURE AND REALIZATION OF BUSINESS INVESTMENT ANTICIPATIONS

Department of Commerce-Securities and Exchange Commission Survey

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This paper presents an analysis of the Office of Business Economics-Securities and Exchange Commission annual surveys of plant and equipment expenditure anticipations. Data are shown comparing anticipated and actual outlays in terms of overall aggregates, major industry divisions and in terms of frequency distributions of individual firm differences. The latter are given by size of firm, scale of investment and industry. Some of this material has already appeared but greater detail, by years, is being made available in this presentation. This will make possible a check on the validity of conclusions previously reached on the basis of more limited observations.

Certain points should be made clear at the outset. First, the OBE-SEC series applies to a one-year investment anticipation, obtained from each respondent in the early part of each year. The factors relevant to the realization of such anticipations are not necessarily the same as those most pertinent to the realization of longer-range expectations. For one thing, as we shall indicate later, elements related to plant and equipment supplies and the inventory of capital goods in process of production take on increased importance in these short-run anticipations.

The regular quarterly data published by the OBE and SEC provide the user with a more sensitive instrument than is available through annual anticipations alone. We are confining our remarks chiefly to the annual survey, but it is important to keep in mind that the user is presented in the early part of each year with quarterly figures as well, and is given the opportunity of reaching judgments from the complete set of anticipations.

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Second, the series was started shortly after the end of World War II. This period has witnessed substantial changes in fixed business investment and total output but the predominant trend has been upward. In 1949 and 1954, the two years of downturn, investment decreased 5 and 6 percent in current dollars and the GNP less than 1 percent. While the changes were slightly larger in deflated terms and also from highest to lowest quarter, the fact that they have been quite mild in character obviously limits what we can say about the performance of the survey under different economic conditions.

Third, perhaps as a corollary of the conditions of high and rising demand that have prevailed in the postwar period, there have been widespread shortages of particular kinds of labor and materials. As measured by our price indexes, the rise in construction and equipment costs since the end of the war has been almost uninterrupted. It may be that delays and shortages are always encountered in a period of heavy fixed investment when plant construction in particular is important. Their existence makes difficult a statistical analysis of investment and particularly the realization of investment expectations. This factor was found to be quite significant in 1949 and 1955 in surveys especially designed to determine causes for differences between actual and expected investment.

Finally, the existence of the rapid tax amortization programs, in the 1951-53 period especially, also introduced important influences on investment programs and the expectations of their realization not found under more normal conditions.

Any conclusions that we come to in this paper are necessarily tentative. Aside from the above-noted qualifications we recognize that the breakdowns of the company data are restricted in their scope and do not take into account -- except in a limited way -- fundamental determinants of investment on the demand side.

Overall results

Table 1 presents summary results of the survey for the aggregate and for 6 major industry divisions from 1947 through 1957. The actual figures for 1957 are preliminary, representing the sum of two seasonally adjusted actual quarters and two anticipated quarters.

It is clear that the overall record, where the emphasis of the survey has been, is quite favorable. Actual expenditures have been within 3 percent of anticipated in seven out of the eleven years; in only two years, 1947 and 1950, were deviations very large. Direction of change was correctly anticipated in ten out of eleven years -- 1950 being the exception -- including both downturn years of 1949 and 1954.

Results by major industry divisions also appear good, although deviations are usually larger than for the aggregate. The important manufacturing division, accounting for about two-fifths of aggregate outlays over this period, shows deviations of 2 percent or less in seven of the years. Deviations in railroad anticipations appear to be the largest of any of the major industry divisions, while mining, nonrail transportation and commercial firms show median deviations higher than the overall. The record on direction of change shows that in the eleven periods manufacturers have missed twice, mining firms, three times, and rails, other transportation and public utilities, once each.

Underestimates (actual in excess of anticipated) have been somewhat more common than overestimates in the overall total and manufacturing, mining and the commercial group, while overestimates are more prevalent in both transportation groups; public utilities are about equally divided between the two.

Cross-Sectional Results

Those who have followed the previous evaluations of the investment anticipations surveys are familiar with the fact that the individual firm does not anticipate with anything like the closeness that is apparent in the aggregate, and that the individual firm deviations are in large part offsetting. Thus, we find that in 1956, for example, a year when the overall deviation in manufacturing was ~~only~~ ^{under} 1 percent, actual outlays for only 30 percent of the manufacturers came within 20 percent or less of anticipated expenditures.

These are unweighted results, of course, which reflect the predominance of small firms in the sample, and ignore the importance in the dollar aggregates of large firms. Some notion of their importance may be seen, for example, in the fact that in 1956 the 250 largest concerns, with assets over \$100 million, accounted for about 60 percent of total corporate manufacturing assets. Anticipations of large firms, as is well known, come much closer to realization than anticipated outlays of small companies. A weighted distribution for the year 1956 shows a much different picture from the distribution of firms: on this basis about five-eighths of manufacturers' anticipated expenditures fall within the 20 percent range of realization and the extremes of the distribution of company deviations are considerably reduced in importance.

There still remains an appreciable amount of dispersion given the small deviations that are apparent in the overall results. What is important to know is whether the deviations are random in character, or whether there are forces, either persistent or varying over the cycle, which affect the distribution of the positive and negative deviations. We begin with an examination of the structure of anticipations broken down by (asset) size of firm, which is presented in Table 2. In this table and the ones that follow the distributions refer to firms. The weighted results shown in Table 1 should always be borne in mind.

Size of firm

The distributions of deviations by firm size in Table 2, including both OBE and SEC companies, are summarized with respect to four characteristics. They point to the following:

(1) On the average large firms were almost equally distributed between those exceeding and those falling short of anticipations, with some tendency to overstate anticipations. On the average more than three-fifths of small and medium-sized firms exceeded anticipations in the years 1949-56.

(2) In each of the years examined, the proportion of firms whose actual outlays were within 20 percent of anticipated outlays, increased as size of firm increased.

(3) In each of the years very large positive and negative deviations decreased in importance as size of firm increased. While the extreme parts of the distributions carry little weight in the dollar aggregates, their relative importance is of interest mostly as a manifestation of small firm behavior, particularly when such companies have definitely altered their views about income and sales.

Although the analysis by size of firm is still incomplete we may mention a number of reasons that have been adduced for the relatively better performance of large as compared with smaller firms. It is safe to say that capital budgeting, while by no means uniformly practiced by all large companies, becomes more prevalent as size of firm increases. The existence of large deviations among large firms, and the information offered by company executives in interviews conducted by the two agencies and by other investigators, make it clear that budgets may be flexible instruments. But the fact that they are employed presupposes a willingness to disregard, to some extent at least, short-run fluctuations in demand. These characteristics of large firms showed up in our 1955 questionnaire results. Large firms less often than small

ones attributed changes from anticipations to unexpected changes in sales, profits and working capital requirements.

Large firms have an advantage over small ones in that their reported expenditures usually involve several projects, where there may be offsetting errors. Their ability to better allow for an average amount of replacement or unexpected breakdowns is also a consideration. Finally, and most important, the results by size of firm reflect the fact that over the period shown large firms have been engaged in large scale programs relatively more frequently than small firms, as is discussed below.

Scale of investment

Tables 3, 4 and 5 give annual data, for the years 1950-56, on deviations of actual over anticipated investment, broken down by size of firm and scale of investment, for manufacturing, electric and gas utilities, and railroads. Scale of investment is measured by the ratio of anticipated outlays to gross fixed assets at the start of the year. ^{1/} A limited amount of information for 1949 is given in Table 3.

The data for manufacturing are summarized below:

1. In each of the years, firms reporting large-scale programs showed smaller deviations than firms anticipating medium and small-scale programs. (See Table 3)

^{1/} The discussion on scale is confined to the firms registered with the SEC only, because gross fixed assets data were lacking for most of the non-registered companies. Throughout this paper "small", "medium" and "large" scale programs refer to the classifications first shown in Table 3.

It is recognized that the measure of scale of investment, anticipated outlays divided by gross fixed assets, when related to the ratio of actual over anticipated expenditures, may involve some spurious correlation, especially with respect to the tendency of firms engaged in large scale programs to spend less than planned.

2. In six of the eight years under study, manufacturing firms anticipating large scale programs spent less than planned; companies anticipating small and medium scale programs almost always spent more than their anticipated outlays.

3. Since size of firm and scale of investment are closely correlated, it is necessary to remove the influence of company size to determine scale effects. Table 4 shows that, with firm-size held constant, companies with large scale programs had a better record in anticipations in practically every year. We may also observe that as scale of investment increased, the proportion of firms that spent more than planned decreased.

4. In each year, the larger the firm, the more frequent were large scale programs. 1/ (See Table 6) This is a major factor in the relatively better performance of large companies and their characteristic of spending less than planned. The size-of-firm effect remains, however. When scale of investment is held constant, in most years a higher proportion of large firms' deviations fall within the + 20 percent intervals. (Table 5)

5. Regardless of firm size, when small scale programs have been anticipated, they have invariably been exceeded. When large scale programs have been reported, they show no particular tendency to exceed or fall short if anticipated by small and medium firms. But large programs of large companies have almost always fallen short of reported expectations.

6. The same characteristics of the ratios that were evident in manufacturing appear in utilities and railroads. The medium and large programs of both groups show little difference in the proportion falling within the 20 percent limits. The utilities have almost always spent less than planned, especially with large programs. The rails have tended to exceed anticipations when the programs have been small; otherwise they exhibit no persistent tendencies.

1/ It is important to note that the plant and equipment expenditures refer to gross and not net investment.

Plant and equipment

In order to investigate more closely the content of small and large scale programs, manufacturing firms were classified according to scale of investment and proportion of plant to total anticipated 1956 expenditures. Separate plant and equipment data are not currently published by the OBE and SEC because of inadequate reporting of this particular breakdown by a relatively small but important group of the very largest firms. They predominate in steel, petroleum and chemicals, where the distinction is often not easy to make. The discussion that follows is based on the unpublished reports.

It was found that within each firm-size class the larger scale programs had a much higher proportion of plant than the small scale programs in 1956. For all firm-size classes combined, for example, 30 percent of small scale programs involved outlays consisting of 25 percent or more of plant; 36 percent of medium scale programs were so constituted and 65 percent of large scale programs had this characteristic. (Table 7) It was not possible at this time to make a similar investigation of these characteristics for other years. However, unpublished figures for the manufacturing aggregate show that the ratio of construction to total outlays in 1954 and 1955 generally increased with size of firm.

This breakdown is suggestive of the character of large scale programs and why they show the tendency of coming relatively close to realization. New plants or major plant additions involve large outlays, considerable advance planning and management consideration, and extensive forward commitments because they take long to build. Investigators found that in the Korean mobilization period, for example, scheduled construction time for new manufacturing plants and major plant additions averaged nine months in manufacturing and mining industries. Actual time was considerably greater, as an examination of

construction progress records under the rapid tax amortization program suggests. Average construction time is much longer than 9 months in industries like iron and steel, nonferrous metals, chemicals and petroleum refining.

Industry comparisons

To judge from the aggregate industry averages, manufacturing firms project outlays more closely than either the utilities or railroads. On the basis of the distribution of company deviations, however, the pattern is quite different. A comparison of the largest manufacturers with utilities and railroads, based on average experience for 1950-56 shows that 73 percent of the utilities, 49 percent of manufacturers and 43 percent of the railroads had deviations falling within + 20 percent. The manufacturers referred to here are the largest firms.

With scale of investment and size of firm held constant, utilities still rank ahead of railroads and manufacturing for each scale-of-investment class; the latter industries are not much different with respect to the proportion of firms whose deviations fell within the + 20 percent band. Moreover, utilities and large manufacturing firms characteristically spent less than anticipated when they reported large scale programs.

To sum up:

Large firm size and large size of program have obviously been the most important factors associated with how closely firms realize their programs. But, in addition, other characteristics have been brought to light, associated with whether firms spend more or less than planned.

1. The clearest tendency is a characteristic of firms, regardless of size, to spend more than they anticipate, when the anticipated outlay is a small one. Although large firms are not immune in this respect, small programs of large manufacturers have had an extremely small weight, in any of the years shown, in large company programs.

Since no complete breakdown within manufacturing is available at this time, it is not known to what extent this practice may be concentrated in certain industries. A very limited check revealed that not many large chemical companies and almost no large petroleum firms anticipated small programs over this period. This suggests a possibility that in manufacturing the more slowly growing industries or firms might tend to report low anticipations; in addition, some of the small scale programs apparently represent very late stages of earlier large programs. The tendency to exceed was apparent among the small scale programs of railroads but not public utilities.

2. Because small firms usually report relatively small programs, a comparison of plans and results for the size group as a whole generally has found the actual expenditure higher than anticipated.

3. When large manufacturing firms have reported anticipations of large programs they almost always have spent less than planned. Such programs have carried considerable weight in the manufacturing aggregates. This overstatement also appeared among public utilities, but not railroads. Because of the predominance of large programs among large manufacturing firms, in the aggregate dollar totals such companies have spent slightly less than anticipated.

Reasons for tendencies

The precise nature of these tendencies is not known. The characteristic of the very largest firms to spend less than planned when engaged in major programs is probably the result of unsettled supply conditions that have

characterized the postwar period; questionnaire results, discussed below, lend support to this explanation. It is also possible that engineers are always overly optimistic about completion schedules, which underlie much of the reported anticipated outlays of large firms engaged in major undertakings. It may also be due to a practice on the part of large companies to make unusually large contingency allowances in their anticipations; Gort found this to be the case with electric utilities but we have no direct evidence with respect to manufacturing.

The fact that the overstatement appears in utilities and large manufacturing firms, but not railroads, suggests that the longer lead time for the programs of the former industries, as compared with railroads, makes them more vulnerable to delays. In this regard it is of interest that large programs of small firms, involving presumably shorter construction times, do not fall short on the average.

The characteristic of companies to exceed reported anticipations when the anticipation is relatively small may result from a number of factors. It may come about because of inadequate allowance for prices when the firm makes the projection. There is undoubtedly some price element present if the existence of supply shortages is admitted as a reason for shortfalls. Moreover, the price trend has been fairly steady upward in the period considered. However, the amount of the excess in the case of the small firm aggregate is rather large (roughly 10 percent, on the average, from 1952 to 1956) to be attributable primarily to price effects. Any price effects in the case of the largest firms must be more than offset by other negative effects, in view of the tendency to fall short.

Results from the questionnaires are helpful in this connection. The 1955 questionnaire revealed that some firms were submitting anticipations before the board of directors had met, so that only figures for the ensuing few months were available. The necessity of cutting costs in the face of intensified competition may lead to unanticipated outlays. Unexpected machinery breakdowns are another element causing understatement; both of these reasons were found in the 1949 and 1955 questionnaires. The 1955 questionnaire showed that some firms, usually the smaller ones, have little basis for making an anticipation. Their actual expenditures are related not to anticipations that can be made explicit but to current income or cash position.

Another possibility is that firms report as an anticipation primarily what has been contracted for, or what remains to be done from work started in a previous period. If this is the chief explanation of the excess, it explains why the aggregate expenditures for the second half of the year have ordinarily been understated, as observed in past OBE-SEC surveys. This bias is even more evident in longer range anticipations.

Comparisons among years

An adequate consideration of Tables 4 and 5, comparing the differences of the ratios from year to year, can obviously be done only with reference to the associated data on industry, sales, profits, liquidity and other factors that may affect planned and actual expenditures. Consequently, at this time we only direct attention to a few of the salient figures for manufacturing. The qualifications regarding the representativeness of this period should be kept in mind.

The 1950-56 average experience, expressed in terms of the medians in Tables 4 and 5 is used to gauge the performance of companies in two years

of sharp upturn, 1950 and 1955, and the one year of mild downturn shown, 1954.

1. The proportion of manufacturing firms spending more than planned.

a. Small programs In 1950 and 1955 the ratios are above average regardless of size of firm, though the excess is small for the largest firms. All sizes fall below average in 1954.

b. Large programs Those of small manufacturers appear to vary cyclically, like the small programs just noted. Those of medium and large manufacturers are for the most part little different from average in 1950, 1954 and 1955; the largest deviation, in 1955, is contracyclical.

c. Medium programs There is some evidence of cyclical variability but no distinct pattern by size of firm.

2. Utilities and railroads spending more than planned.

In terms of scale of investment, patterns of cyclical variability in the case of utilities and rails are less clear than in manufacturing. For rails as a group there appears to be a cyclical pattern.

Direction of change

Information on direction of change is shown in Table 8. The ability of an aggregate series to forecast direction of change is extremely important but for the individual firm it is obviously only a rough measure of predictive ability. Direction of change in the aggregate has been missed even though about three out of four manufacturers have been able to anticipate direction properly. The individual firm data are nonetheless of interest particularly as an indication of small firm behavior and they give further evidence of the tendency of companies to spend more than their reported anticipations.

First, in none of the years shown did the proportion of correct anticipations of direction of change fall below 67 percent; the

proportions are lowest in 1950 and 1955. These overall data on number of firms are, of course, dominated by small companies. While large companies show some advantage in this kind of ability there is relatively little difference by size of firm.

A rough indication of the structure of anticipations -- expected direction of change with respect to actual outlays in the preceding year -- is also given in the table. Except for 1951, when an aggregate investment increase of 45 percent was projected by manufacturers, more than half of the anticipations have been expectations of decrease. An examination of large firm expectations would show a much more nearly equal distribution in this respect.

A distinct difference can be noted between the accuracy of positive and negative expectations. In every year projections of decreases are correct less often than those of increases -- another aspect of the tendency of firms to understate anticipations. Expectations of increase have been correct most often in 1951 and the turning point year of 1955; least often, in the downturn year of 1954 and the steel strike year of 1952.

* * * * *

On the basis of the previous discussion is it possible to discern any patterns of realization in years when economic activity has varied? Focusing attention on the manufacturing sector primarily, it may be possible to offer some very tentative conclusions.

Certain points stand out with respect to the performance of the overall manufacturing total. First, actual expenditures have come very close to anticipations in the years 1951 and 1956, when very large increases have been projected. The years following them have also turned out quite well. Second,

the two years of downturn in both overall output and plant and equipment expenditures have also been anticipated very closely. Third, the two years which have seen an upward change in direction from the previous year -- 1950 and 1955 -- have shown less than average (median) accuracy.

The large deviation in manufacturing in 1950 appears to have been attributable very largely, though not exclusively, to the outbreak of the Korean hostilities in the middle of the year. This is not necessarily the case with the overall total. On the basis of the current seasonally adjusted series, actual second quarter 1950 outlays, after rising sharply from the first, show an annual rate of expenditure almost the same as the 1949 total, in contrast with the greater than 10 percent decline that was anticipated for the year. The survey that was reported in June of 1950, moreover, indicated that further increases were being scheduled for the third quarter.

Considered by itself, the annual survey for manufacturing in 1955 missed the direction of change. Viewed in the light of the quarterly information that was simultaneously provided, the survey correctly indicated that the downturn in investment would come to a halt in the first quarter of 1955 and that a sharp rise would follow. The projected figure for the full year 1955 was about 4 percent higher than the seasonally adjusted first quarter, which was the sixth successive quarter of decline. From a user's point of view it might possibly be more appropriate to state that the extent of the investment rise was understated.

Effect of sales and profits

In examining the anticipations with the results of the manufacturing surveys over the past 5 years, an association can be noted between deviations from anticipated investment and deviations from anticipated sales. Table 9

presents a comparison of signs for individual manufacturing industries, from 1952 to 1956. The poor association may be noted in 1952 and 1956; we suggest reasons for this below.

A high correlation can be obtained by relating, on an aggregative basis, deviations from annual sales anticipations with deviations from the annual investment anticipations, for the years 1948-1956. In addition, the questionnaire results for 1949 and 1955 demonstrated that departures from sales expectations were important influences on the changes from anticipated plant and equipment expenditures.

We agree that departures from sales and profits expectations have been the primary influences that have given rise to changes from investment expectations. What is stressed in this paper is that the particular economic context in which those sales and profits deviations occur must be taken into consideration, and we suggest, on the basis of the cross-sectional discussion in the preceding pages, how departures from sales expectations may be modified. Among the modifying influences considered are the practice of firms to understate actual expenditures; the plant and equipment supply situation; the prevalence of large scale programs; and the stage of completion in the investment cycle.

The tendency toward understatement

The understatement bias works in a contracyclical fashion on the downside since it counteracts the influence of sales disappointments in causing reductions from planned investment. Since this practice results in a low anticipation, when sales turn out better than planned, the rise in investment over the anticipation appears to be accentuated.

In 1957, for the first time since the annual survey was begun, a limited attempt was made to correct for this understatement by small manufacturers.

We quote below from the March 1957 Survey of Current Business:

"The adjustment amounted to a 10 percent increase, which was roughly the average annual understatement of the small firms, considered as a group, over the past 5 years. The adjustment was uniformly applied to the planned expenditures of the small size classes in each industry. The correction added \$.3 billion to total anticipated manufacturing investment as reported in this review; this constitutes 2 percent of manufacturing investment and .8 of 1 percent of aggregate investment this year."

The prevalence of large scale programs

The cross-sectional data indicate that large scale programs in manufacturing, when anticipated by large and medium-sized firms, have shown some insensitivity to cyclical change, though the test was necessarily quite limited by the period under consideration.

One check of sales deviations was conducted, comparing firms engaged in large programs and those engaged in small programs. Companies were classified by 2-digit manufacturing industries; firm size had to be disregarded as an independent variable because of the small numbers involved. It was found that median sales deviations of firms engaged in large programs were virtually as great as (within one percent) or greater than sales deviations of firms engaged in medium or small programs, in 7 out of 9 industries in 1954 and 1955, and 6 out of 9 industries in 1956. This is merely suggestive of an inflexibility of investment in large scale expansions and replacement programs.

Plant and equipment supplies

The plant and equipment supply situation is difficult to treat, partly because it does not readily lend itself to measurement under normal circumstances. We do not ordinarily have "supply-requirements" data except

those that are compiled by the government during war and mobilization periods, when allocations systems are in effect. This is one field, incidentally, where "aggregate supply" data may be especially misleading because of the crucial importance of particular kinds of materials or labor.

Another more important reason is that the effects of plant and equipment supplies become less significant as influences on the realization of investment anticipations as the time period under consideration lengthens. We are dealing here with one year anticipations and this is a comparatively short time, given the timing factors that are relevant in the planning and execution of fixed investment, especially in heavy manufacturing industries and public utilities.

The questionnaire approach has proved very enlightening in demonstrating the importance of supply conditions as an influence on the realization of investment. 1/ According to the 1955 survey, among firms that spent less than their anticipated expenditure in 1955, it was found that the failure of plant and equipment deliveries and construction progress to meet schedules was by far the most important economic factor listed by respondents, and its importance increased with size of firm and size of program. This might well explain the persistent tendency of large programs of large firms to fall below expectations.

The questionnaire found that in 1955 supply conditions were much more important than disappointments in demand among firms that spent less than planned, whereas among firms that exceeded plans, unexpectedly high sales and profits were by far the most important reasons listed. In the 1949

1/ The 1955 questionnaire also demonstrated that slow deliveries and construction progress were an important explanation for what on the surface appeared to be an anomaly in the individual company data and, often-times, industry data; short falls in investment coupled with an excess of actual over anticipated sales.

study the relative importance of supply conditions and demand was reversed: those firms that exceeded plans in 1949 mentioned better-than-expected supplies more often than they mentioned better-than-expected profits or sales outlook. In contrast, firms that fell short of anticipated investment in 1949 stressed poorer-than-expected sales, profits and working capital much more often than supplies. This changing importance of supplies in two different phases of the cycle as revealed in the questionnaire, indicates how supply conditions may play a modifying and partially compensatory role in affecting the realization of investment plans.

Stage of completion

The stage of the individual firm's investment cycle, and the amount of work that remains to be done at the start of the year, have a bearing on the extent to which programs are realized.

The expenditure anticipation may be thought of as consisting of two parts: outlays to be made to complete (or extend) projects that were started in earlier periods -- the carryover; and outlays for projects scheduled to be started. We may consider the carryover portion of an anticipation the more certain, relatively inflexible part, and the new portion as the less certain, relatively flexible part. A large volume of work remaining to be done at the start of the year, even though it may represent a decline in outlays, is a stabilizing influence on an investment anticipation, especially when it is the completion phase of a previously planned major project.

At the end of 1953, for example, there was a sizable element of previously started work included in the 1954 anticipated decrease, representing work carried over from the Korean mobilization period. The requirement to complete such work will not prevent a reduction of outlays below anticipations

when sales turn out worse than expected, but it acts to limit the size of the reduction. The end of 1949 saw postwar low points in unfilled orders and goods-in-process inventories in durable-goods industries, and probably the lowest volume of work carried over in the entire postwar period. The anticipation for the year 1950 was especially vulnerable to a shift in sales from expectations; the anticipation for that year, as already shown, turned out to have a large deviation, even before the Korean outbreak.

Table 1 - Plant and Equipment Expenditures of U. S. Business,
Actual and Anticipated, 1947-1957

(Actual expenditures in previous year = 100)

	<u>Manu- fac- turing</u>	<u>Min- ing</u>	<u>Rail- road</u>	<u>Other trans- porta- tion</u>	<u>Public util- ities</u>	<u>Com- mercial and other</u>	<u>All indus- tries</u>
1947							
Actual.....	126	123	161	(1)	183	132	134
Anticipated.....	104	109	175	(1)	163	112	115
Percent actual of anticipated...	121	113	92	(1)	112	118	117
1948							
Actual.....	112	116	144	88	141	122	119
Anticipated.....	104	100	176	98	121	125	115
Percent actual of anticipated...	108	116	82	90	116	97	103
1949							
Actual.....	87	92	102	74	117	95	94
Anticipated.....	87	102	110	93	117	93	95
Percent actual of anticipated...	100	90	93	80	100	102	99
1950							
Actual.....	113	92	84	85	101	96	102
Anticipated.....	93	88	69	67	94	88	89
Percent actual of anticipated...	122	105	123	126	108	110	115
1951							
Actual.....	145	131	133	123	111	107	124
Anticipated.....	145	131	133	141	112	110	129
Percent actual of anticipated...	100	100	100	87	99	97	97
1952							
Actual.....	107	106	95	101	106	98	103
Anticipated.....	108	107	100	119	108	90	104
Percent actual of anticipated...	99	99	95	84	98	108	100
1953							
Actual.....	102	100	94	104	117	113	107
Anticipated.....	100	103	93	101	114	100	102
Percent actual of anticipated...	102	97	101	103	103	113	105
1954							
Actual.....	93	99	65	97	93	103	95
Anticipated.....	93	103	72	96	97	103	96
Percent actual of anticipated...	100	96	91	101	95	100	99
1955							
Actual.....	104	98	108	106	102	115	107
Anticipated.....	97	92	89	99	104	107	101
Percent actual of anticipated...	107	107	121	107	98	107	106
1956							
Actual.....	131	130	133	107	114	117	122
Anticipated.....	131	119	142	111	116	112	122
Percent actual of anticipated...	100	109	94	96	98	104	100
1957							
Actual..... ^{2/}	108	102	118	101	125	94	106
Anticipated.....	110	98	119	107	124	94	106
Percent actual of anticipated...	99	103	99	95	101	100	99

NOTE: Percent actual of anticipated based on unrounded indexes.

1/ Included with Commercial and other.

2/ Includes anticipation for third and fourth quarter.

**Table 2 - Selected Characteristics of Distribution of Deviations
between Actual and Anticipated Manufacturing Expenditures,
by Size of Firm, 1949-1956**

	<u>Under \$10 Million</u>	<u>\$10 to \$50 Million</u>	<u>\$50 Million and Over</u>
Percent of Firms with Actual Expenditures more than Anticipated:			
1949	60	61	43
1950	76	74	51
1951	63	64	59
1952	62	53	42
1953	65	64	48
1954	62	58	44
1955	71	62	51
1956	65	59	46
Median	64	61	47
Percent of Firms with Actual Expenditures within 20 percent of Anticipated:			
1949	22	33	48
1950	17	24	40
1951	23	35	50
1952	24	37	52
1953	23	36	47
1954	20	33	49
1955	21	32	47
1956	23	40	55
Median	22	34	48
Percent of Firms with Actual Expenditures 60 percent or more above Anticipations:			
1949	32	18	10
1950	52	39	15
1951	34	23	17
1952	35	19	10
1953	38	20	13
1954	35	22	8
1955	43	26	11
1956	37	21	6
Median	36	22	11
Percent of Firms with Actual Expenditures 40 percent or more below Anticipations:			
1949	16	9	9
1950	11	6	1
1951	16	8	5
1952	15	13	7
1953	14	8	2
1954	17	11	7
1955	12	8	6
1956	16	8	5
Median	16	8	5

Table 3. - Deviations from Planned Investment According to Scale of Investment^{1/}
1949 - 1956

Companies with actual expenditures within 20 percent of anticipation,
as percent of total number

	Manufacturing				Utilities				Railroads ^{2/}				
	Scale of Investment				Scale of Investment				Scale of Investment				
	Less than 5%	5% to 9.9%	10% and over	Total	Less than 5%	5% to 9.9%	10% and over	Total	Less than 2%	2% to 3.9%	4% and over	Total	
1949	26		43										
1950	18	31	42	64	17	72	70	64	20	36	55	31	
1951	21	38	42	72	64	64	77	72	11	54	48	43	
1952	22	40	43	66	50	57	71	66	29	50	58	50	
1953	25	33	45	79	64	66	86	79	40	58	64	56	
1954	21	38	47	76	58	78	78	76	31	62	39	43	
1955	20	37	45	76	45	76	71	76	24	43	46	34	
1956	24	41	49	73	46	77	76	73	8	46	40	34	
Median	21	38	44	73	50	72	76	73	24	50	48	43	

Companies with actual expenditures more than anticipated, as percent of total number												
1949	61		49									
1950	78	65	54	51	34	50	59	51	80	64	50	69
1951	72	66	52	38	55	52	25	38	62	46	70	39
1952	67	49	42	35	50	48	31	35	67	39	33	42
1953	75	60	44	40	38	41	40	40	83	64	49	62
1954	67	53	44	31	28	32	31	31	50	32	22	40
1955	76	62	43	38	70	37	29	38	66	51	54	59
1956	72	59	44	42	45	46	35	42	70	58	30	49
Median	72	60	44	38	45	46	31	38	67	51	49	49

1/ Scale of investment is measured here by the ratio of anticipated capital outlays to gross fixed assets at the beginning of the year. Sample includes SEC registrants only.

2/ Due to the generally lower outlays relative to gross fixed assets, the scale of investment classes used here for railroads differs from other groups.

Table 4. - Deviations from Planned Investment According to Scale of Investment 1/

Manufacturing by Size of Firm, 1950-1956

Companies with actual expenditures within 20 percent of anticipation,
as percent of total number

	Less than \$10 Million				\$10 Million to \$50 Million				\$50 Million and Over			
	Scale of Investment				Scale of Investment				Scale of Investment			
	Less than 5%	5% to 9.9% over	10% and over	Total	Less than 5%	5% to 9.9% over	10% and over	Total	Less than 5%	5% to 9.9% over	10% and over	Total
1950	19	17	34	20	18	28	38	25	18	46	50	38
1951	21	20	37	27	16	43	38	34	40	48	54	50
1952	16	29	42	27	31	39	33	34	14	63	57	52
1953	17	26	33	23	32	31	49	37	35	48	54	48
1954	16	32	30	23	24	33	52	35	30	54	57	49
1955	13	33	34	24	23	33	48	33	30	51	57	48
1956	22	28	48	34	22	46	49	40	42	54	54	52
Median	17	28	34	24	24	33	48	34	30	51	54	49
Companies with actual expenditures more than anticipated, as percent of total number												
1950	79	74	73	76	80	72	44	74	73	47	36	51
1951	70	57	52	60	74	70	51	64	70	52	51	60
1952	73	52	49	60	61	51	40	51	78	40	35	42
1953	71	62	43	63	78	62	47	63	63	49	36	47
1954	68	65	43	63	68	50	50	58	60	42	37	45
1955	79	64	51	68	73	62	45	62	74	61	29	53
1956	71	60	52	61	75	64	67	59	65	51	34	44
Median	71	62	51	63	74	62	47	62	70	49	36	47

1/ Sample includes SEC registrants only because gross fixed asset data were lacking for most of the non-registered companies.

Table 5. - Deviations from Planned Investment According to Size of Firm 1/
 Manufacturing by Scale of Investment, 1950-1956

Companies with actual expenditures within 20 percent of anticipation,
 as percent of total number

	Less than 5%				5% to 10%				10% and over			
	Asset Size of Firm		Asset Size of Firm		Asset Size of Firm		Asset Size of Firm		Asset Size of Firm		Asset Size of Firm	
	Less than \$10 Mil.	\$50 Mil. to over	Total	Less than \$10 Mil.	\$50 Mil. to over	Total	Less than \$10 Mil.	\$50 Mil. to over	Total	Less than \$10 Mil.	\$50 Mil. to over	Total
1950	18	18	18	17	28	46	34	31	34	38	50	46
1951	16	40	21	20	43	48	37	38	37	38	54	48
1952	31	14	22	29	39	63	42	40	42	33	57	58
1953	32	35	25	26	31	48	33	33	33	49	54	56
1954	24	30	21	32	33	54	30	38	30	52	57	57
1955	23	30	20	33	33	51	34	37	34	48	57	57
1956	22	42	24	28	46	54	48	41	48	49	54	56
Median	24	30	21	28	33	51	34	38	34	48	54	56
Companies with actual expenditures more than anticipated, as percent of total number												
1950	80	78	78	74	62	47	73	65	73	44	36	54
1951	74	70	72	57	70	72	52	66	52	51	51	52
1952	61	78	67	52	51	40	49	49	49	40	35	42
1953	78	63	75	62	62	49	43	60	43	47	36	44
1954	68	60	67	65	50	42	43	53	43	50	37	44
1955	79	74	76	64	62	61	51	62	51	45	29	43
1956	75	65	72	60	64	51	52	59	52	47	34	44
Median	74	70	72	62	62	49	51	60	51	47	36	44

1/ Sample includes SEC registrants only because gross fixed asset data were lacking for most of the non-registered companies.

^{1/}
Table 6 - Distribution of Firms According to Scale of Investment
as percent of total number
1950 - 1956

	Manufacturing by Asset Size of Company											
	Less than \$10 million			\$10 million to \$50 million			\$50 million and over					
	Less than 5%	5% to 9.9% over	10% and over	Total	Less than 5%	5% to 9.9% over	10% and over	Total	Less than 5%	5% to 9.9% over	10% and over	Total
1950 ...	50	31	19	100	59	26	15	100	30	37	33	100
1951 ...	24	34	42	100	40	26	34	100	15	31	54	100
1952 ...	33	32	35	100	49	23	28	100	14	30	56	100
1953 ...	38	31	31	100	49	29	22	100	23	34	43	100
1954 ...	41	33	26	100	52	31	17	100	24	43	33	100
1955 ...	47	29	24	100	40	38	22	100	26	38	36	100
1956 ...	29	30	41	100	36	28	36	100	15	32	53	100

	Utilities						Railroad ^{2/}					
	Less than 5%			Total			Less than 2%			Total		
	Less than 5%	5% to 9.9% over	10% and over	Total	Less than 2%	2% to 3.9% over	4% and over	Total	Less than 2%	2% to 3.9% over	4% and over	Total
1950 ...	15	44	41	100	48	33	19	100	48	33	19	100
1951 ...	12	35	53	100	17	25	58	100	17	25	58	100
1952 ...	5	24	72	100	21	28	51	100	21	28	51	100
1953 ...	8	24	68	100	23	38	39	100	23	38	39	100
1954 ...	7	44	49	100	48	34	18	100	48	34	18	100
1955 ...	13	50	37	100	52	34	14	100	52	34	14	100
1956 ...	8	44	48	100	26	30	44	100	26	30	44	100

^{1/} Scale of investment is measured here by the ratio of anticipated capital outlays to gross fixed assets at the beginning of the year. Sample includes only S.E.C. registrants.

^{2/} Due to the generally lower outlays relative to gross fixed assets, the scale of investment classes used here for railroads differs from other groups.

Table 7 - Distribution of Manufacturing Firms According to Scale of Investment^{1/} and Proportion of Plant Outlay to Total by Size of Firm, 1956

Plant Outlays as Percent of Total Expenditures	Less than \$10 million			\$10 million to \$50 million			\$50 million and over			All Sizes						
	Scale of Investment			Scale of Investment			Scale of Investment			Scale of Investment						
	Less than 5%	5% to 9.9% over	10% and over Total	Less than 5%	5% to 9.9% over	10% and over Total	Less than 5%	5% to 9.9% over	10% and over Total	Less than 5%	5% to 9.9% over	10% and over Total				
0	47	45	19	36	38	19	7	19	24	8	10	12	41	28	12	25
.1 to 24.9	36	29	21	29	38	56	38	44	48	55	31	40	38	44	30	37
25.0 to 49.9	10	20	29	20	17	18	32	23	28	22	35	30	15	20	31	23
50.0 and over	7	6	31	15	7	7	23	14	--	15	24	18	6	8	26	15
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

^{1/} Scale of investment is measured here by the ratio of anticipated capital outlays to gross fixed assets at the beginning of the year. Sample includes only S.E.C. registrants.

Table 8. - Anticipated and Actual Direction of Change from Actual
Capital Expenditures in Previous Year
Manufacturing, 1950 - 1956

	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>
Percent of firms:							
Anticipating and experiencing an increase.....	29	50	27	36	27	35	47
Anticipating an increase but experiencing a decrease.....	6	9	8	8	8	7	8
Anticipating and experiencing a decrease.....	38	26	48	38	47	36	30
Anticipating a decrease but experiencing an increase.....	<u>27</u>	<u>15</u>	<u>17</u>	<u>18</u>	<u>18</u>	<u>22</u>	<u>15</u>
Total.....	100	100	100	100	100	100	100
Percent of firms correctly anticipating direction of change.....	67	77	75	73	74	71	77
Percent of firms indicating increase.....	36	59	35	44	35	42	55
Percent correct.....	82	86	77	81	77	83	84
Percent of firms indicating decrease.....	64	41	65	56	65	58	45
Percent correct.....	58	64	74	67	72	62	67

NOTE: Figures are rounded and will not necessarily add to total

Table 9. - Comparison of Investment and Sales Deviations, 14 Manufacturing Industries, 1952 - 1956

	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>
Investment higher, sales higher than anticipated.....	1	9	2	11	3
Investment higher, sales lower than anticipated.....	6	3	4	1	3
Investment lower, sales higher than anticipated.....	3	1	0	2	3
Investment lower, sales lower than anticipated.....	4	1	8	0	3
Total number of industries...	14	14	14	14	12 <u>1/</u>
Number with like signs.....	5	10	10	11	6

1/ Excludes two industries where one of the deviations was less than .5 percent.