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Capital requirements and operating ratios

THE ELECTRIC MOTOR INDUSTRY

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**BY THE UNIVERSITY OF PENNSYLVANIA
Wharton School of Finance and Commerce
Industrial Research Department**

**In cooperation with the
UNITED STATES DEPARTMENT OF LABOR
James P. Mitchell, Secretary**

**BUREAU OF LABOR STATISTICS
Ewan Clague, Commissioner**

UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 4

Wharton School of Finance and Commerce

June 23, 1953

INDUSTRIAL RESEARCH DEPARTMENT
3440 Walnut Street

LETTER OF TRANSMITTAL

To the Commissioner of Labor Statistics:

I submit herewith CAPITAL REQUIREMENTS AND OPERATING RATIOS, THE ELECTRIC MOTOR INDUSTRY, 1950 and 1951, which has been prepared by this department of the University of Pennsylvania pursuant to the contract with the Department of Labor, acting on behalf of the Mutual Security Agency, for a series of financial ratio studies of selected industries.

These ratio studies are part of the Technical Assistance Program of the Mutual Security Agency and grew out of a request of the United Kingdom that was endorsed by the Organization for European Economic Cooperation and developed at a meeting with representatives of European productivity centers in Washington in December 1951. They are intended to be supplemental to other reports released by the MSA under a Technical Assistance project officially identified as "TA OEEC-94, Case Study Data on Productivity and Factory Performance."

Other industries covered in this series of reports are: men's shirt, coarse paper, paperboard, work clothing, radio and related products, agricultural machinery, and men's shoe.

This report for the electric motor industry has been prepared from tabulations and preliminary analyses provided by the National Credit Office of 2 Park Avenue, New York City, in the interest of promoting the international exchange of information on the financial experience of industries operating under private ownership and direction.

The following members of the staff of the Industrial Research Department aided in the preparation of this report: Charles M. James, Marjorie C. Denison, Miriam Hussey, Elsa Klemp, and Helen Staley

Respectfully submitted,



Hiram S. Davis
Director

HSD:hwn

Mr. Ewan Clague
Commissioner of Labor Statistics

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Capital Requirements and Operating Ratios

THE ELECTRIC MOTOR INDUSTRY
1950-51

PART I: INTRODUCTION AND SUMMARY

PURPOSE

The reasons often cited for the high level of industrial productivity of the United States compared with other countries include: (1) greater use of capital; (2) easier raising of capital; and (3) larger expenditures on selling activities. Do these explanations hold true when firms of similar types and sizes are compared? Are there other significant financial differences that have been overlooked? For example, how does the percent of profits retained in the business by firms in other countries compare with that retained by comparable firms in the United States?

Such questions have direct bearing upon any program for raising national productivity. However, the necessary financial data for making international comparisons, by similar types and sizes of businesses have not been available. This report is one of a series designed to help provide these data. It provides information on capital use, costs, and profits of selected American industries in a form facilitating comparisons with their counterparts abroad. For this reason, percentages and ratios have been used to avoid the need for, and difficulty of, converting American financial data into different national currencies.

TYPICAL RATIOS

The capital, operating, and profit ratios given in this report apply to small- and medium-size firms devoted wholly or primarily to the production of electric motors.

Space is provided in table 1 for users of this report to insert for comparative purposes the ratios for a corresponding type of company or industry of interest to them. In making such comparisons, account should be taken of the following facts concerning the average ratios shown:

(a) They indicate requirements, costs, and profits at relatively high levels of activity, being based on the experience of 1951, a year in which dollar sales were the highest on record for many of the firms in the sample.

(b) They are typical only in the sense that they have been derived from the reports of firms selected to represent the manufacture of fractional horsepower motors and fractional and integral horsepower motors by small- and medium-size firms that specialize either in the production of standard or special-purpose types. This selection, however, was not made by probability sampling because of the limited number of reports for which adequate financial

information was immediately available. The averages shown for each group were calculated from group totals and are, therefore, equivalent to the average of the individual firm ratios weighted by sales.

(c) The ratios shown are probably more representative of the general level for smaller firms in the industry than they are for the two size groups into which the sample was divided -- firms with less than 500 employees and those employing between 500 and 2,500 workers. In fact, the only classification that revealed a consistent difference was that by type of motor produced (standard type vs. special type) and the difference only applied to the inventory/sales ratio (table 5).

(d) Typical figures were derived from the usual annual balance sheet and profit and loss statement prepared by firms in the industry. In the interests of increasing comparability among the firms, some adjustments were made for unusual items (appendix I); in a few cases inventories were shifted from a "last-in, first-out" basis to the method of valuation formerly used by the firms. Adjustments were not made, however, to revalue plant and equipment at 1951 prices. It seemed reasonable to assume that the ratios presented usually would be compared with similar ratios computed directly from similarly unadjusted book figures.

Table 1. Summary and comparison work sheet: Capital, operating, and profit ratios for firms producing electric motors, 1951

Item	Average 1951 ratios for industry sample in United States of firms employing—		Ratios for your firm or industry
	Under 500	500 and over	
CAPITAL REQUIREMENTS:	Dollars		
<u>Investment used per \$100 of net sales: 1/</u>			
Total assets	54	60	
Current 2/	36	39	
Plant and equipment, gross	16	19	
Other	2	2	
SOURCES OF CAPITAL AS—	Percentages		
<u>Percent of total investment:</u>			
Capital stock 3/	22	24	
Retained profits	39	38	
Long-term credit	2	4	
Short-term credit 4/	37	34	
OPERATING RATIOS AS —			
<u>Percent of net sales:</u>			
Total costs	82	81	
Cost of goods sold 5/	66	70	
Sales and admin. expenses 6/	16	11	
PROFIT MARGIN ON SALES:			
Before income taxes	18	19	
After income taxes	6	6	
PROFIT RETURN ON OWNERS' INVESTMENT: 7/			
Before income taxes	59	50	
After income taxes	21	17	
DISPOSITION OF PROFITS AS —			
<u>Percent of total profits:</u>			
Income taxes	64	66	
Dividends	13	13	
Retained in business	23	21	

1/ Directly comparable with investment per 100 pounds, francs, marks, lira, or other national currency because these figures are ratios of investment value to net sales value.

2/ Includes cash and government securities before deduction of any reserves for tax liability.

3/ Includes capital surplus and any capitalized past earnings.

4/ Includes trade credit, bank and other short-term loans, and current accruals.

5/ Includes depreciation.

6/ Includes net of other costs and nonsales income.

7/ Sum of capital stock and surplus and retained profits not yet capitalized.

USE OF RATIOS

What can be learned by inserting in table 1, ratios for another firm or industry that manufactures electric motors? If the inserted ratios likewise applied to a period of high activity, would any difference be significant? Would similarities have significance? In other words, what use can be made of capital, operating, and profit ratios calculated from the balance sheet and the profit and loss statement?

Basically, the ratios are simply a device for facilitating comparison of the economic performance of two or more firms, or of the same industry in two or more regions or countries. They compress the detail of the statements from which they are derived into key relationships that can be readily compared between firms or industries. The value of the comparison is derived from the questions that it provokes and from the analysis that is stimulated to find out why the ratios differ or are similar. Even granting differences in accounting practices, such analysis can still show whether the economic performance of a firm or industry is lagging compared with others.

Capital Ratios

A firm or industry may use too much or too little capital in relation to sales. What is too much or too little is not necessarily indicated by its own experience. Even though the rate of use by a single firm or industry may seem satisfactory, comparison with the experience of others may well indicate that a different ratio is desirable.

In ratio analysis, the capital-sales relationship is usually expressed in turnover form--sales divided by assets, giving the number of times the equivalent value of assets was sold or turned over. In this report, however, the reverse ratio is used--assets divided by sales, or the capital required for a given volume of business. ^{1/}

The relationship of capital to sales can be altered either by changing the volume of sales or the amount of capital. The turnover ratio traditionally implies increasing sales, but in comparison among companies and across national boundaries, a broader approach is warranted.

Explanation of any differences and the consideration of possible action should encompass not only the question of whether sales were too low, but also whether the capital investment itself ought to be changed. Study of one situation might reveal, for example, that capital was being ineffectively used,

^{1/} Cost of goods sold would have been preferable to net sales as a value measure of business volume because it is free from the price changes that occur in selling prices. Sales were used, however, because they are a generally accepted, albeit rough, measure of business volume.

and that by improved control of inventories or receivables the same volume of business could be maintained on a smaller investment. Examination of another case might indicate that by increased investment in machinery, more effective use could be made of labor or materials, thereby reducing total costs.

The kind of analysis suggested can be more illuminating if made in terms of the rate of use of the major classes of assets. As between two countries, the conclusion might be reached that a given industry in one country had too low a ratio of plant and equipment assets to sales and too high a ratio of sales to inventories and receivables--that is, was undercapitalized for manufacturing and overcapitalized for trading,

Source-of-Capital Ratios

The source of funds can be an important factor in the financial health of a firm or industry or even its ability to meet new conditions and keep its processes and product up-to-date. If too much reliance is placed upon short-term credit, such as loans of short duration from banks, this credit might be restricted or withdrawn at the very time it is needed most, and thereby lead to financial instability. Likewise, excessive reliance on long-term credit, such as bonds, can lead to difficulties. It can result in interest charges so burdensome during periods of slow business that they restrict the expenditures needed to keep the product and plant abreast of the industry.

The appropriate balance among the different sources of financing--short-term credit, funded debt, sales of stock, and reinvestment of profits--for a firm or industry will naturally depend upon individual circumstances. However, there is a well-grounded tradition of following past practice in financial matters. For this reason, if a firm or industry compares source of capital ratios, like those shown in table 1, with those of other firms or industries, questions may be raised regarding methods of financing that have heretofore been accepted. For example, manufacturers of electric motors, regardless of country, who have a plant needing rehabilitation, may well ask whether they have been retaining enough profits if they have a very low ratio compared with that shown in table 1.

Operating Ratios

For two or more firms carrying on the same type of business, ratios of costs to sales reflect: (1) their relative economic efficiency; (2) their relative economic advantages and disadvantages; and (3) the degree of competition prevailing in the markets in which they buy and sell.

Consequently, two firms could differ in efficiency and yet have the same ratio of costs to sales because the less efficient had some locational or other special advantage, or sold in a less competitive market. Similarly, differences in cost ratios could be due as much to variations in special advantages and competition as to variations in efficiency of firms.

In other words, comparison of cost ratios for firms in the same type of business reveals whether the combined effect of efficiency, special advantages, and competition is sufficient to give one firm, or one group, lower ratios than another. To judge which factor had been the most potent in a given case, one could well begin by posing a series of possible explanations for the differences found and then eliminate those explanations that analysis proved to be inadequate.

Assume that electric motor manufacturing in another country is found to have a lower ratio of total costs to sales than is typical of such manufacture in the United States. Does this mean that the American industry is less efficient or more competitive?, that special advantages are enjoyed by the industry of the other country?, or simply that costs have not been defined in the same way?

Much light can be thrown on the meaning of differences in ratios of total costs to sales by examining other ratios such as the rate of capital use or turnover. A high ratio of costs to sales may be a mark of efficiency in a competitive market if accompanied by a rapid rate of capital turnover. On the other hand, a low ratio of costs to sales, if accompanied by a slow rate of capital turnover, could be indicative of an inefficient business operating in a protected market.

The ratios of various classes of costs--such as manufacturing or selling and administrative--to sales will also help isolate the factors which may account for differences in the total ratio. In fact, they may reveal significant differences hidden by the total ratio. Such differences could be dismissed as due simply to differences in definition of the various classes of cost. If other possible explanations were considered, however, ratio analysis could well cause one's firm or industry to reexamine policies that had been accepted without challenge.

Profit Ratios

The ratio of profit to sales is the complement of the ratio of total costs to sales. Therefore, an analysis of differences in the cost/sales ratio is actually an analysis of those in the profit/sales ratio, but consideration of profits in ratio analysis should not stop with whatever is learned from the examination of operating ratios.

Two firms, for example, might appear to be equally profitable according to their profit margin on sales, but relating these same profits to owners' investment might reveal that quite different rates of return had been earned. Further examination might show, as previously suggested, that the firm with the higher rate of earnings had been able to achieve a higher rate of capital turnover--that is, to use less capital. Or the owner might have made a relatively small investment compared with that of the creditors, a situation that could prove detrimental to the business despite a high current rate of profit.

Even more important than comparisons of rate of profit, especially across national boundaries, are comparisons of the disposition pattern--what percent of profit is absorbed by taxes, what proportion is taken by owners as dividends or otherwise withdrawn, and what proportion is reinvested in the business.

The rate at which profits are being put back into a business or industry is a good index of the rate at which efforts are being made to keep plant, processes, and product up-to-date;--that is, whether a policy of continuous modernization is being followed as compared with that of intermittent rehabilitation or even neglect.

STEPS IN RATIO ANALYSIS

(1) Choose firms for the analysis that are as comparable as practicable in terms of such considerations as product and rate of operation. Information is provided in part II regarding the product, structure, and market trends of the American electric motor industry for use in establishing the degree of comparability of firm or industry that may be analyzed in relation to the typical figures given here.

(2) Standardize the balance sheets and profit and loss statements from which the basic figures are to be compiled so that the major items on each are as comparable as practicable among firms. The major adjustments made for this purpose are described in appendix I.

(3) Compile the necessary figures and compute the ratios for each firm. The worksheet used in this study is given in appendix III.

(4) Determine the typical value for each ratio and the nature of the variations around this value. How such values were derived for the American electric motor industry is described in the parts of this report pertaining to each class of ratio.

(5) Analyze the reasons for any differences or unexpected similarities in ratio values between the firms or groups of firms being studied. Some examples of such analysis are given in the sections of this report devoted to particular ratios.

Capital Requirements
and Operating Ratios

THE ELECTRIC MOTOR INDUSTRY
1950-51

PART II: BACKGROUND

PRODUCTION AND PRICE TRENDS

The major products of the electric motor industry of the United States are, in order of sales value: (1) fractional horsepower motors, (2) integral horsepower motors and generators, (3) parts and supplies for motors, generators, and motor-generator sets, (4) motors, generators, and control apparatus for land transportation equipment, and (5) several smaller classes of motors, generators, motor-generator sets, and prime mover-generator sets.

In the production of fractional horsepower, the most important item in 1947 was an alternating current motor rated from 1/6 hp. to, but not including, 1/2 hp. The most important item in the production of integral horsepower was an alternating current polyphase-induction motor of 1 to 5 hp.

The output of electric motors and generators dropped steadily from 1947 through 1949. In response to increased military needs arising from the outbreak of hostilities in Korea, however, production of motors and generators in 1950 rose almost to the level recorded in 1948. In 1951, output was considerably above the output reported for 1947, also a year of peak production.

Table 2. Index of electric motor and generator production, 1947-51
(1947=100)

Year	Index
1947	100
1948	95
1949	88
1950	93
1951	112

Source: Based on shipments data compiled by the Census Bureau. Deflated by the wholesale price index for motors and generators prepared by the Bureau of Labor Statistics.

The prices of electric motors rose in 1950, and again in 1951 (table 3). Among four representative types of motors, 1/4 hp. motors showed the smallest increase from 1947 to 1951--14 percent, 5 hp. motors showed the largest increase--44 percent. Virtually all of these price increases occurred between June 1950 and March 1951.

The price increases shown, largely reflected rising prices for materials and labor. According to the BLS, between 1947 and 1951, average hourly earnings of production workers in the motor, generator, transformer, and controls industry increased 28 percent. According to the same source, material prices for some types had advanced even more. For example, the list

Table 3. Indexes of wholesale prices of selected motors, 1948-51
(1947=100)

Period	Horsepower			
	1/ 1/4	2/ 3	3/ 5	4/ 10
1948	99	106	106	106
1949	99	105	111	104
1950	99	109	123	110
1951	114	128	144	128
1950:				
January-March	95	102	113	102
April-June	95	102	118	104
July-September	99	113	126	113
October-December	107	120	133	120
1951:				
January-March	114	128	143	128
April-June	114	128	144	128
July-September	114	128	144	128
October-December	114	128	144	128

1/ Alternating current motor, 1/4 hp., 110-115 volts, manufacturer to original equipment manufacturer, f.o.b. factory, freight allowed, each.

2/ Alternating current motor, polyphase induction motor, 3 hp., open sleeve bearing, manufacturer to original equipment manufacturer, f.o.b. factory, freight allowed, each.

3/ Direct current motor, 5 hp., manufacturer to original equipment manufacturer, f.o.b. factory, freight allowed, each.

4/ Alternating current, polyphase induction motor, 10 hp., open sleeve bearing, manufacturer to original equipment manufacturer, f.o.b., factory freight allowed, each.

Source: Wholesale Price Index, U. S. Department of Labor, Bureau of Labor Statistics.

price of certain types of carbon steel used in the industry increased more than 30 percent during this same period. Actual increases, however, were probably greater because steel shortages may have forced some firms to buy in the so-called "gray market."

INDUSTRY STRUCTURE

Electric motors are made in the United States by two types of companies: (1) those that engage wholly or predominantly in the production of motors and generators; and (2) those that make many other types of products. The large diversified, electrical manufacturers are prominent in the latter group.

There is an extremely wide range of plant size. Some plants employed fewer than 250 persons in 1950, whereas others operated plants employing 2,500 or more workers. About 32 percent of the employees of the industry were in plants whose employment was under 1,000, and 68 percent were in plants employing 1,000 or more. In terms of "value added by manufacture," the small plants (under 1,000 employees) represented 28 percent of the industry, and the large plants, 72 percent.

Although electric motors and generators are manufactured in many parts of the United States, nearly half of the plants are located in the East-North-Central States which include Ohio, Illinois, Wisconsin, Michigan, and Indiana.

INDUSTRY SAMPLE

The 13 firms covered by this report were selected as representative of the manufacture of electric motors in the United States by small to medium firms engaged wholly or largely in the production of motors. As defined in this survey, "small" firms are those employing less than 500; "medium" firms are those employing between 500 and 2,500 persons.

The final choice of these firms was, of necessity, limited to those for which adequate financial statements were immediately available for 1950 and 1951. It was not possible, therefore, to include more firms by size and type of product. The sample does include, however, firms that primarily manufacture standard motors and those that specialize in special-purpose motors. Each of these subgroups in turn contains firms that specialize in the production of fractional motors and those that produce both the fractional and integral types. A classification by motor horsepower is not provided, however, for any of the ratios, because no significant relation was found between any of the ratios and the range of motor sizes made.

Capital Requirements
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1950-51

PART III: CAPITAL REQUIREMENTS

"Capital requirements" in this report refers to the assets that are needed in the manufacture of electric motors. The major classes in the order of their usual importance in American industry are: (1) inventories; (2) fixed assets; (3) accounts receivable; and (4) cash and liquid securities.

Absolute values do not adequately describe capital requirements. If two manufacturers of electric motors have assets of equal value but one has twice the sales volume of the other, it "requires" or uses only half as much capital as the other firm per unit of sales. In this report, therefore, capital requirements are stated as value of assets used per \$100 of net sales; in effect, as the ratio of value of capital used to value of products sold. So expressed, capital requirements are directly comparable between countries, regardless of differences in currencies, because the ratio of assets to annual sales is expressed in terms of a percentage.

Capital requirements are also sometimes expressed as investment per employee. Significant ratios of this kind could not be presented, however, because adequate employment data were not available for enough firms.

ASSETS TO NET SALES

Attention is given first to each major class of assets in order of relative liquidity, beginning with the least liquid and proceeding to the most liquid--that is, beginning with fixed assets and ending with cash. Then total investment requirements are considered. This order is followed so that the reasons for including fixed assets on a gross, rather than a net basis, can be developed in advance of presenting total requirements.

Fixed Assets to Net Sales

For the sample firms, investment in buildings, machinery, jigs and fixtures, and other equipment on a gross basis averaged less than \$20 per \$100 of net sales in 1951. "Gross" basis refers, of course, to original cost before deduction of depreciation reserves.

This ratio reflects the rate of fixed capital use at a very high volume of sales. As indicated by the last column of table 4, sales for the sample firms in 1951 increased on the average more than 50 percent over 1950. Many reported that their 1951 sales were the highest on record.

Experience of the sample firms indicated that the kind of motor manufactured did not have much effect upon plant and equipment investment. Average requirements, however, seemed to be a little higher for the firms with more than 500 employees than for those with less (table 4). There was some tendency also for the larger firms to make the larger size integral motors.

Ratios of investment to sales given in this section, as well as most of other ratios in this report, have been calculated by dividing the appropriate totals for each size and product group. The 1951 ratio of gross fixed assets to sales of \$16 per \$100 for the 7 firms employing less than 500 persons (table 4) was obtained by dividing total fixed assets for the firms by their total net sales. The result is the same as an average of the individual firm ratios weighted by firm sales. The median and low and high ratios have been omitted from all tables because of the small number of firms in each size-product group.

It is probable that the group averages would be changed, to some extent, if more firms were added. Care was taken, however, to exclude unusual cases and to include only those firms that seemed to be representative of each group listed. Even then, there were a few instances in which the range among the three or four firms selected was fairly wide.

Table 4. Fixed assets per \$100 of net sales, 1950-51

Firms by size	Number of firms	Year	Average fixed assets per \$100 of net sales ^{1/}		Percent of gross fixed assets at end of year		Depreciation rate	Percent of increase in net sales ^{2/}
			Gross	Net	Net fixed assets	Fixed asset expenditures 1949-51		
Under 500 employees	7	1951	\$16	\$ 9	62	30	10	56
		1950	22	13	57	--	9	44
500 employees and over	6	1951	19	11	60	27	7	54
		1950	27	14	52	--	6	27

^{1/} Average of fixed assets, end of fiscal years, 1949 and 1950; and 1950 and 1951. Most firms included owned building, as well as factory equipment, or had made extensive leasehold improvements on rented property.

^{2/} 1951, change from 1950; 1950, change from 1949.

"Gross" vs. "net" basis. "Gross" rather than "net" value of plant and equipment has been emphasized in this discussion because the "net" figures would understate the actual amount of capital being used. They show the value left after deduction of accumulated depreciation reserve. Therefore among firms, or groups of firms, differences might arise on a "net value" basis that were simply due to differences in the period over which the assets involved had been depreciated or in the rate or method of depreciation. This shortcoming of "net value" comparison is especially acute in industries such as electric motors. This industry has been permitted a rapid depreciation of new plant and equipment in computing income taxes in order to encourage defense production. In such cases, nevertheless, the amortized investment will usually be carried as part of the gross value of plant and equipment.

Even "gross value" figures usually have the shortcoming of reflecting differences in prices at which the assets in question were acquired, as well as differences in their quality and physical volume, because they are usually stated at original cost rather than at current replacement value. For example, two motor manufacturing plants of the same size and construction and identically equipped would differ substantially in gross value if one was erected at the prices of the early 1940's and the other at the much higher prices of the early 1950's.

One way to determine the extent to which different groups of firms acquired their fixed assets at about the same price level is to compare their ratios of net to gross value of such assets. These ratios are shown in table 4, column 5. For example, in 1951 the net value of fixed assets averaged 62 percent of gross for the firms with less than 500 employees and 60 percent for those with 500 or more employees. The similar percentages for the two groups would generally indicate that their fixed assets had been subject to depreciation for about the same period of time.

One exception to this interpretation should be considered. The ratio of net to gross value could be the same for the two groups if one group acquired their assets at a later date but had a higher average depreciation rate. The depreciation rate could be higher either because a greater proportion of assets were in machinery or other equipment subject to high depreciation rates, or because a greater proportion qualified for rapid depreciation under the defense program. In the comparison cited, the small firms did have a slightly higher average depreciation rate for 1951 than the large firms -- 10 percent of gross compared with 7 percent.

Some indication of the relative age of plant and equipment can also be obtained by determining the proportion of gross plant and equipment, now in place, that was installed within recent years. Expenditures on fixed assets from 1949 to 1951 amounted to 30 percent of the gross value of such assets at the end of 1951 for the small firms, and 27 percent for the larger firms-- suggesting that the average small firms in the sample had newer fixed assets than the larger firms. (Table 4, fourth column.) Nevertheless, the difference is small enough that a comparison of the gross fixed assets/sales ratios of the two groups is appropriate.

Equipment ratios. Different types of fixed capital, such as buildings, machinery, transportation equipment, and dies and jigs, naturally vary as to length of useful life, and therefore, as to rate of depreciation and frequency of replacement. Consequently, total plant and equipment ratios may conceal significant variations in rate of capital use. In fact, the total ratios tend to reflect the changes of investment in buildings because such investment is usually by far the largest in terms of value. For this reason, it would be particularly desirable to show ratios of investment per \$100 of sales for each major category of fixed capital. Such ratios cannot be provided, however, because few firms furnished sufficient detail concerning fixed assets on their balance sheets.

Current Assets to Net Sales

The manufacture of electric motors in the United States requires a substantially larger investment in current than in fixed assets. This applies to firms already in business. Possibly a firm entering the business today with new plant and equipment would find, however, that it had to invest almost as much in plant and equipment as in inventory and other current assets.

Inventories. Stocks of materials, work-in-process, and finished products comprise the major portion of the current capital required in the manufacture of electric motors. According to the sample data, the relative size of such stock depends largely upon whether a firm is engaged primarily in the production of standard or special-purpose motors. Total inventories averaged about \$22 to \$23 per \$100 of sales in both 1950 and 1951 for firms that specialized in standard motors and \$15 to \$17 for those that emphasized manufacture of special motors. Size of firm made little difference. The producers employing less than 500 persons had, on the average, about the same inventory level as their larger competitors making standard or special motors (table 5).

Differences in the size of the motors made seemed to have little influence on inventory position, except that the larger integral motors were usually not stocked. One of the larger firms reported having full stocks of standard motors at 70 warehouses from which to supply its customers.

Accounts receivable. Outstanding accounts averaged \$10 to \$12 per \$100 of sales among the sample firms in 1951 regardless of firm size or product classification (table 5). Moreover the range of variation among the entire 13 firms in the sample was very narrow, the lowest ratio being \$8 per \$100 and the highest, \$12 per \$100. This relationship of receivables is to be expected because all firms in the sample sold wholly or largely to industrial buyers, and all handled their own collections. Usual terms were net 30 days.

Cash. The level of cash requirements for all current capital needs, is probably least well represented by taking cash holdings at the beginning and end of the year. Not only are there seasonal variations in cash needed for meeting payrolls and bills for material, but there are also variations among firms on year-end cash position that may simply reflect differences in management opinion as to the merits of showing as much of current assets in cash as possible at the balance sheet date.

That the factors mentioned, and others peculiar to a given firm, can produce wide variations in the cash/sales ratios is indicated by the sample under study. Ratios of cash, including government securities, to sales ranged from \$1 to \$20 per \$100 in 1951. In view of these variations, and the fact that they had no apparent relation to type of motor manufactured or firm size, broad group averages are used in table 5 to represent cash requirements.

Total Assets to Net Sales

According to the experience of the sample firms, the manufacture of standard electric motors required an average total investment of about \$60 per

Table 5. Average current assets per \$100 of net sales, 1950-51

Firms by size and principal product	Number of firms	Year	Total	Inventories ^{1/}	Accounts receivable ^{2/}	Cash	Percent of increase in net sales ^{3/}
Under 500 employees . . .	7	1951	\$36	\$18	\$10	\$ 8	56
		1950	39	19	12	8	44
Standard motors . . .	3	1951	41	22	11	8	46
		1950	43	23	12	8	49
Special motors . . .	4	1951	33	15	10	8	67
		1950	35	16	11	8	39
500 employees and over.	6	1951	38	19	10	9	54
		1950	44	19	11	14	27
Standard motors . . .	3	1951	42	23	10	9	36
		1950	46	22	10	14	53
Special motors . . .	3	1951	35	15	11	9	71
		1950	42	17	11	14	10

^{1/} Generally valued at cost or market, whichever is lower; in the case of one firm employing "last-in, first-out" valuation, adjustment was made to cost or market on basis of information provided in its annual reports.

^{2/} Net, after deduction of reserves for bad debts.

^{3/} 1951, change from 1950; 1950, change from 1949.

\$100 of sales at the high level of sales generally reached in 1951; for special motors the average was \$56 or less. Gross value of fixed assets was used in arriving at these ratios. As was pointed out in the preceding discussion of current assets, the difference between the investment requirements of a firm emphasizing the manufacture of standard motors and one specializing in special motors has proven, for the sample firms, to be entirely a difference in average inventory requirements.

Ratios given in table 6 do not necessarily indicate the investment that would now be required to start a wholly new firm for the manufacture of either standard or special-purpose electric motors. Rather, they suggest that the investment ratio would probably have to be higher in terms of initial sales volume. Undoubtedly, it would take considerable time for a new plant and organization to stabilize. Moreover, the fixed asset ratios would have to be markedly higher because the figures given reflect substantially lower construction and equipment prices than now prevail.

These ratios do, however, provide some yardstick for an existing firm. Certainly any firm that exceeds the averages under conditions like those of 1951 would have cause to inquire why it should have a higher rate of capital use. The explanation could be that its plant and equipment investment was

newer and, therefore, higher-priced. But in the absence of such obvious explanations, some analysis of company performance might be appropriate.

Table 6. Average total assets per \$100 of net sales, 1950-51

Firms by size and principal product	Number of firms	Year	Total	Current <u>1/</u>	Fixed, gross	Other <u>2/</u>
Under 500 employees . . .	7	1951	\$54	\$36	\$16	\$2
		1950	64	39	22	3
Standard motors . . .	3	1951	59	41	16	2
		1950	68	43	22	3
Special motors . . .	4	1951	51	33	16	2
		1950	60	35	22	3
500 employees and over.	6	1951	59	38	19	2
		1950	74	44	27	3
Standard motors . . .	3	1951	63	42	19	2
		1950	76	46	27	3
Special motors . . .	3	1951	56	35	19	2
		1950	72	42	27	3

1/ For composition of current assets, see table 5.

2/ Includes prepaid expenses, cash value of insurance, investment in subsidiary or other companies, tax claims, deferred charges, and patents.

SOURCE OF CAPITAL

Retention of profits provided the greatest single source of capital for all but two of the firms in the sample. On the average, retained profits supplied a third or better of the total capital used in the business for every subgroup analyzed (table 7).

Capital stock was not always the next most important source. For some firms, and even for some groups, short-term credit in the form of current accruals supplied a larger portion of the total investment.

Current accruals, including income tax liability, are considered a form of short-term credit because the cash that might be accumulated to discharge these liabilities can be used in the meantime for temporary financing of current production. In fact, several firms were compelled to do just that in 1951, as indicated by the fact that their tax liability was substantially greater than their holdings of cash and government securities.

Credit extended by suppliers on open account was usually a more important source of short-term credit than bank loans. It might be assumed that the producers emphasizing the manufacture of standard motors would have to make extensive use of short-term bank loans to finance their inventories, but that

was not the case for all the firms in the sample. Manufacturers of standard motors among the small firms did make relatively more use of bank loans in 1951 than did the manufacturers of special motors; the reverse was true, however, among the larger manufacturers.

Long-term credit was not widely used by the sample firms. The percentages which appear for the various groups in table 7 in all cases reflect long-term borrowing by one or two firms in the group. Various forms of borrowing were used, although some form of mortgage on fixed assets was the most common.

Table 7. Percent distribution of total investment, by source, 1950-51

Firms by size and principal product	Number of firms	End of year	Owners' investment		Long- and inter- mediate term credit	Short-term credit			Percent of increase in total investment ^{1/}
			Profits retained in business	Capital stock and surplus		Trade	Bank and other loans	Other	
Under 500 employees	7	1951	39	22	2	8	4	25	37
		1950	43	29	4	10	3	11	33
Standard motors	3	1951	33	27	2	7	7	24	38
		1950	36	37	5	8	2	12	31
Special motors	4	1951	45	17	1	8	1	28	37
		1950	51	21	1	12	4	11	36
500 employees and over . . .	6	1951	37	24	4	7	4	24	35
		1950	51	24	6	7	1	11	22
Standard motors	3	1951	38	35	3	3	2	19	26
		1950	47	32	4	6	2	9	22
Special motors	3	1951	37	16	5	10	4	28	42
		1950	54	17	7	9	0	13	22

^{1/} 1951, change from 1950: 1950, change from 1949.

Capital Requirements
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THE ELECTRIC MOTOR INDUSTRY
1950-51

PART IV: OPERATING RATIOS

TOTAL COSTS TO NET SALES

For the 13 firms in the sample, total costs ranged from 68 to 96 percent of net sales in 1951, and from 79 to 99 percent in 1950, a year of much lower sales volume. These cost variations were largely associated with circumstances peculiar to the firms concerned. Averages by size and product groups do not reveal any consistent variation (table 8). In fact, the average percentages for the firms with less than 500, and those with more than 500, employees were virtually the same in both 1950 and 1951. Total costs comprised cost of goods sold, depreciation, administrative and selling expenses, and other costs netted against nonsales income. All taxes levied on the firm are included, except income taxes.

Some of the firms in the sample, especially in 1950, characterized the manufacture of fractional and small integral motors as highly competitive. One firm implied that other product lines had been added because of such competition and stated that, although motor sales contributed most to sales volume, other lines contributed most to profit. But this was not the only way that firms in the industry were seeking to improve their cost position. Some were pushing cost reduction vigorously and others were emphasizing service to consumers--manufacturers of standard motors were stressing quick delivery, and those of special-purposes motors, their ability to provide "tailored-to-the-job" combinations of motors, controls, and drives.

MANUFACTURING COSTS TO NET SALES

It is possible that the ratios shown in table 8 on cost of goods sold to net sales are too low, and those of selling and administrative expenses to sales, too high. For instance, for the groups with the highest selling and administrative expense ratios, some costs have been included that would usually be classed as factory overhead. It would be expected, for example, that the small firms might have higher administrative cost ratios because of failure to allocate, to cost of goods, the portion of executives' time that was spent on direct factory supervision. The small firms in the sample, especially those making standard motors, do show this tendency (see "selling and administrative costs" column of table 8).

Table 8. Costs as percent of net sales, 1950-51

Firms by size and principal product	Number of firms	Year	Total	Cost of goods sold <u>1/</u>	Selling and administrative costs	Other <u>2/</u>	Percent of increase in net sales <u>3/</u>
Under 500 employees	7	1951	82	66	15	1	56
		1950	89	71	17	1	44
Standard motors	3	1951	81	62	17	2	46
		1950	86	65	19	2	49
Special motors	4	1951	82	69	13	0	67
		1950	91	76	15	0	39
500 employees . . and over	6	1951	81	70	11	0	54
		1950	87	73	14	0	27
Standard motors	3	1951	85	74	11	0	36
		1950	90	78	12	0	53
Special motors	3	1951	78	67	11	0	71
		1950	84	70	14	0	10

1/ Including depreciation.

2/ Other costs netted against other incomes.

3/ 1951, change from 1950; 1950, change from 1949.

The cost of goods ratio in the motor business is influenced to a considerable extent by volume. That is indicated by the drop from 1950 to 1951 in the average cost of goods ratio for all groups as sales volume increased substantially -- unitwise as well as in dollar value, for price increase alone could not have accounted for the average increases in sales (table 8, column 8). Many firms in the sample reported various capital expenditures in the interest of reducing cost. One firm, for example, stated that it had been unable to meet competition by producing motors in a multistory plant and had therefore set up a motor assembly line in a single-story plant with appropriate mechanization including the use of conveyors. Another firm that had achieved a remarkably low ratio of both cost of goods and of total costs to sales attributed this showing to the "initiative and cooperation" of employees, stating that "their efforts to improve quality of our products, reduce overhead, and put forth a full day's productive labor for each 8 hours of work have substantially contributed to the successful results of our operation."

SELLING AND ADMINISTRATIVE EXPENSES

If the ratios of selling and administrative expenses, shown in table 8, for producers of standard motors with less than 500 employees are discounted on the ground that some factory overhead has been included, then neither size of firm nor type of motor made seems to have any influence on the expense/sales ratio. That is, according to the experience of the firms analyzed, selling and administrative expenses average about 11 to 13 percent of sales value during a year of high volume such as 1951. This figure includes some engineering and product development work.

As indicated by the experience of the sample group, it made little difference whether a firm specialized in producing motors for a particular industry, or whether it sold to a variety of industries -- the ratio of selling and administrative expenses to sales seemed little affected. It might have been expected that the firms specializing in production of special-purpose motors would have higher ratios than those stressing the manufacture of standard motors because the selling of special-purpose equipment could involve a greater degree of sales engineering. The only indication of this difference in selling requirements in the sample group was the fact that the firm with the most extensive system for distributing standard motors had one of the lowest ratios of selling and administrative costs to sales.

Capital Requirements and Operating Ratios

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PART V: PROFIT (LOSS) RATIOS

"Profits" (losses) or the return to the persons who own the equity capital of a company, are defined here as the residual amount of income left after paying all operating costs, deducting charges for depreciation and amortization, and meeting interest payments on any short-term or funded debt. "Operating costs" include all taxes, except those that are levied by the Federal and State Governments, upon the net income of a company.

Profits are measured here by the usual ratios of profits to net sales and to owners' investment. In order to show what happens to profits, the discussion of profit return is followed by a section on proportions absorbed by taxes, paid out as dividends, and left in the business.

PROFITS (LOSSES) TO NET SALES

As anticipated by the discussion of the ratios of total costs to net sales, there was considerable variation among the sample firms in profit margin secured on sales. As far as could be determined, this variation was largely related to the degree of success achieved in keeping down costs, or other reasons peculiar to the individual firm.

As shown in table 9, there was no significant variation by size of firm or type of motor made. The firms with more than 500 employees that manufactured special motors did have a higher average profit margin than those that produced standard motors. On the other hand, among the firms with less than 500 employees, the firms that manufactured standard motors, had a slightly higher margin than those that produced special motors.

PROFITS (LOSSES) TO OWNERS' INVESTMENT

Owners invest in a corporation through the purchase of stock and by decisions of the board of directors (whom they elect) to retain profits in the business. As discussed in part III, retention of earnings constituted by far the most important form of owner investment among the manufacturers of electric motors.

The variation already mentioned in profit margins also resulted in wide variation in profits earned on owners' investment. On the average, earnings

Table 9. Profits (losses) before and after taxes, as percent of net sales, 1950-51

Firms by size and principal product	Number of firms	Year	Profits as percent of net sales		Percent of increase in net sales ^{1/}
			Before income taxes	After income taxes	
Under 500 employees	7	1951	18	6	56
		1950	11	6	44
Standard motors	3	1951	19	7	46
		1950	14	8	49
Special motors	4	1951	18	6	67
		1950	9	5	39
500 employees and over	6	1951	19	6	54
		1950	13	7	27
Standard motors	3	1951	15	6	36
		1950	10	6	53
Special motors	3	1951	22	7	71
		1950	16	9	10

^{1/} 1951, change from 1950; 1950, change from 1949.

before taxes were over 50 percent of investment in 1951, and 27 or more percent in 1950 for the sample firms. These rates were reduced by Federal and State corporate income taxes to an average of about 20 percent in 1951 and 15 percent in 1950. Although earnings doubled, on the average, between 1950 and 1951, largely as a result of the great increase in sales volume (table 9, last column), the advantages of such expansion in earnings to the firm were largely offset by the impact of higher tax rates.

One company, for example, reported that its dollar profit increased about 103 percent from 1950 to 1951 with a 40 percent increase in dollars sales, but that its Federal taxes on profits increased 215 percent at the same time. Consequently, its dollar profit after taxes in 1951 was only 18 percent over that earned in 1950 despite the big expansion in sales.

It may seem that the profit returns shown in table 10 are quite high in relation to the profit margins shown in table 9. The latter, for example, averaged 18 percent of sales in 1951 for the small firms and yet these profits amounted to a "before tax" return of 59 percent on owners' investment. The rate of investment turnover was responsible (table 11). Total

Table 10. Profits (losses) before and after income taxes, as percent of owners' investment, 1950-51

Firms by size and principal product	Number of firms	Year	Before income taxes	After income taxes
Under 500 employees	7	1951	59	21
		1950	27	15
Standard motors	3	1951	56	21
		1950	32	17
Special motors	4	1951	63	22
		1950	22	13
500 employees and over	6	1951	55	19
		1950	27	15
Standard motors	3	1951	39	16
		1950	21	13
Special motors	3	1951	70	21
		1950	32	18

investment on the average was turned over more than twice during the year by the small firms (that is, sales were more than twice the total investment). But owner investment constituted only 66 percent of the total. Therefore, a turnover of more than twice the total investment amounted to over three times that of owners' investment. In other words, a sales volume that was more than three times the owners' investment meant that the firms in question had a return on owner investment that was more than three times the profit margin on sales. Thus, keeping down costs and making effective use of capital both contribute to the rate of investment return.

DISPOSITION OF PROFITS

In general, Federal and State income taxes absorb the largest portion of profit realized in the manufacture of electric motors in the United States. There is some variation in tax rate with size of profit, and companies vary in the eligibility for permissible deductions from taxable income. Moreover, since not all States levy corporate income taxes some companies may have slightly lower tax percentages than others merely by virtue of location.

Table 11. Profits (losses) before income taxes, as percent of owners' investment and of net sales; and investment turnover, 1950-51 1/

Firms by size and principal product	Number of firms	Year	Profits before income taxes as percent of —		Turnover of owners' investment	Owners' investment as percent of total investment	Turnover of total investment
			Owners' investment	Net sales			
Under 500 employees	7	1951	59	18	3.2	66	2.1
		1950	27	11	2.4	78	1.8
Standard motors	3	1951	56	19	2.9	65	1.9
		1950	32	14	2.3	76	1.7
Special motors	4	1951	63	18	3.6	66	2.4
		1950	22	9	2.5	79	2.0
500 employees . . and over	6	1951	55	19	2.9	67	2.0
		1950	27	13	2.1	79	1.6
Standard motors	3	1951	39	15	2.6	76	1.9
		1950	21	10	2.2	81	1.8
Special motors	3	1951	70	22	3.2	61	2.0
		1950	32	16	2.0	77	1.5

1/ The averages were computed to 2 decimal places from the absolute aggregates of the items for each group. Rounding affects the obvious relationships of the columns to each other.

For the sample as a whole, income taxes in 1951 absorbed on the average more than 60 percent of the profits earned. In the preceding year, the corresponding average was only 44 percent (table 12). One firm that was located in a State that levied corporate income taxes, paid combined Federal and State income taxes amounting to 72 percent of profits. The increase in proportion of profits absorbed by taxes in 1951 over 1950 was a result of the impact of higher normal and surtax rates and the reimposition of an excess profits tax by the Federal revenue law of 1951.

Of the remainder after income taxes, nearly two-thirds was retained in the business to finance operations. The remaining third was used to pay dividends. There was no discernible difference by size of firm or type of motor made in relative proportions retained and used to pay dividends.

Table 12. Percent disposition of profits, 1950-51

Firms by size and principal product	Number of firms	Year	Income taxes	Dividends	Retained in business
Under 500 employees	7	1951	64	13	23
		1950	44	16	40
Standard motors	3	1951	63	11	26
		1950	46	13	41
Special motors	4	1951	66	13	21
		1950	41	21	38
500 employees and over	6	1951	66	13	21
		1950	44	22	34
Standard motors	3	1951	59	10	31
		1950	41	11	48
Special motors	3	1951	70	14	16
		1950	45	28	27

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THE ELECTRIC MOTOR INDUSTRY
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APPENDIX I: ACCOUNTING DEFINITIONS AND ADJUSTMENTS

The profit and loss and balance sheet accounts used in this study were standardized insofar as possible from available information according to the following definitions and adjustments:

Profit and loss accounts:

Net sales:	Gross sales, less returns and allowances and discounts on sales.
Cost of goods sold:	Inventory at beginning of period plus manufacturing costs and operating expenses (excluding depreciation) less inventory at end of period. Inventory includes raw materials, supplies, work in process, finished products, and materials in transit, and is usually valued at cost or market, whichever is lower.
Selling expenses:	Salesmen's compensation, advertising, travel, current provision for bad debts, out-freight, etc.
Administrative expenses:	Salaries of principal officers, clerical salaries, and supplies, and similar expenses.
Depreciation and amortization:	These items are shown separately from cost of goods sold and administrative expenses in which they are usually included.
Other costs (income):	Miscellaneous costs were netted against miscellaneous income. Special income that really applied to a prior year's operations, such as bad debt recoveries, sale of fixed assets, tax refunds, and special charges, such as for special reserves, were transferred from profit and loss to the surplus account.

Profit and loss accounts—Continued

Income taxes: Provision for Federal and State taxes on corporate income. All other taxes, such as real estate, are included either in cost of goods sold or expenses.

Balance sheet accounts:

Assets:

**Cash and
government
securities:**

Cash on hand and in banks, securities of the United States Government, including all income tax anticipation notes, and tax refunds reported in current assets.

**Accounts
and notes
receivable:**

Accounts and notes for merchandise shipped to customers, less reserves for bad debts and discounts.

Inventories:

Raw materials, supplies, in-process and finished merchandise, generally valued at cost or market whichever is lower.

Fixed assets:

Machinery, plant, and fixtures at original cost, less amortization and reserve for depreciation.

Other assets:

Includes receivables due from other than customers such as employees and officers, investments other than government securities, prepaid expenses, and deferred charges. These may be current or not as indicated in the reports.

Liabilities:

**Accounts
payable:**

Accounts due suppliers of material.

**Notes, loans,
etc.:**

Secured and unsecured, including current portion of long-term debt.

Tax liability:

Taxes accrued and payable--Federal and State corporate income and all other taxes.

Liabilities—Continued

Other

liabilities:

Accrued interest, wages and salaries, dividends, miscellaneous expenses, taxes withheld from employees' pay, etc. either current or not as noted in reports.

Intermediate- and long- term debts:

Notes and unsecured loans or secured by mortgages or other instruments for more than a year and less than 5 years, intermediate; 6 years and over, long-term.

Owners' invest- ment or equity:

(1) Capital stock, including both that arising from sale of stock and from issuing stock dividends, capitalizing portion of past earnings; (2) net earnings or profits from past and current operations retained in the business but not yet capitalized and net gains from nonoperating and extraordinary transactions, such as, profit from sale of fixed assets and including special accounts or reserved created from earnings to cover either general or specified contingencies (commonly known in American accounting practice as "earned surplus," any earmarked portion being commonly designated as "reserve" with purposes stated); and (3) net gains resulting from transactions in company's own stock, gifts of assets such as to induce location in a given area, forgiveness of indebtedness, and similar sources (variously known in American accounting practice as "capital surplus" and "paid-in surplus").

APPENDIX II

PROFIT AND LOSS STATEMENTS AND BALANCE SHEETS FOR AN AVERAGE SMALL ELECTRIC MOTOR FIRM,^{1/}
1950 AND 1951

	TOTAL		STANDARD		SPECIAL	
	1951	1950	1951	1950	1951	1950
PROFIT AND LOSS STATEMENT (000 DOLLARS)						
NET SALES	3159	2021	3454	2367	2939	1762
COST OF GOODS SOLD INCLUDING DEPRECIATION	2084	1425	2137	1537	2046	1341
	<u>1075</u>	<u>596</u>	<u>1317</u>	<u>830</u>	<u>893</u>	<u>421</u>
SELLING, SHIPPING, AND ADMINISTRATIVE COSTS	469	347	591	459	378	264
OTHER COSTS (INCOME), NET ^{2/}	23	17	54	42	(1)	(2)
	<u>492</u>	<u>364</u>	<u>645</u>	<u>501</u>	<u>377</u>	<u>262</u>
PROFIT (LOSS) BEFORE INCOME TAXES	583	232	672	329	516	159
INCOME TAXES	375	102	424	150	338	65
DIVIDENDS	73	37	77	43	70	33
PROFIT RETAINED IN BUSINESS	135	93	177	136	100	61
BALANCE SHEET						
<u>ASSETS</u>						
CURRENT:						
CASH, U.S. GOVERNMENT SECURITIES, ETC.	314	165	347	258	289	95
ACCOUNTS RECEIVABLE, NET	336	327	397	393	291	278
INVENTORY	677	453	913	577	500	359
TOTAL CURRENT	<u>1327</u>	<u>945</u>	<u>1657</u>	<u>1228</u>	<u>1080</u>	<u>732</u>
FIXED, NET	344	259	382	250	316	266
OTHER	57	53	94	73	28	39
TOTAL ASSETS	<u>1728</u>	<u>1257</u>	<u>2133</u>	<u>1551</u>	<u>1424</u>	<u>1037</u>
FIXED ASSETS, GROSS	555	457	558	411	553	491
<u>LIABILITIES</u>						
CURRENT:						
ACCOUNTS PAYABLE	133	124	159	125	112	124
NOTES, LOANS, ETC.	72	38	140	38	21	37
TAXES	375	93	418	125	342	69
OTHER	63	49	82	55	50	45
TOTAL CURRENT	<u>643</u>	<u>304</u>	<u>799</u>	<u>343</u>	<u>525</u>	<u>275</u>
INTERMEDIATE-AND LONG-TERM CREDIT	31	42	52	84	16	11
OWNERS' INVESTMENT:						
CAPITAL STOCK AND CAPITAL SURPLUS	387	367	579	564	244	219
PROFITS RETAINED IN BUSINESS	667	544	703	360	639	532
TOTAL OWNERS' INVESTMENT	<u>1054</u>	<u>911</u>	<u>1282</u>	<u>1124</u>	<u>883</u>	<u>751</u>
TOTAL LIABILITIES	<u>1728</u>	<u>1257</u>	<u>2133</u>	<u>1551</u>	<u>1424</u>	<u>1037</u>

^{1/} AVERAGE OF DATA FOR 7 FIRMS WITH FEWER THAN 500 EMPLOYEES; 3 EMPHASIZING THE MANUFACTURE OF STANDARD AND 4 OF SPECIAL MOTORS.

^{2/} OTHER INCOME HAS BEEN NETTED AGAINST OTHER COSTS; A FIGURE IN PARENTHESIS INDICATES THAT OTHER INCOME EXCEEDED OTHER COSTS.

APPENDIX II

PROFIT AND LOSS STATEMENTS AND BALANCE SHEETS FOR AN AVERAGE 1/ MEDIUM-SIZE ELECTRIC MOTOR FIRM, 1950 AND 1951

	TOTAL		STANDARD		SPECIAL	
	1951	1950	1951	1950	1951	1950
PROFIT AND LOSS STATEMENT (000 DOLLARS)						
NET SALES	22954	14875	19139	14122	26769	15627
COST OF GOODS SOLD, INCLUDING DEPRECIATION . .	16090	10914	14153	10980	18026	10847
	6864	3961	4986	3142	8743	4780
SELLING, SHIPPING, AND ADMINISTRATIVE COSTS .	2572	2021	2124	1760	3020	2282
OTHER COSTS (INCOME), NET 2/	(45)	(8)	(17)	13	(73)	(29)
	2527	2013	2107	1773	2947	2253
PROFIT (LOSS) BEFORE INCOME TAXES	4337	1948	2879	1369	5796	2527
INCOME TAXES	2874	851	1706	560	4042	1142
DIVIDENDS	555	434	287	157	823	712
PROFIT RETAINED IN BUSINESS	908	663	886	652	931	673
BALANCE SHEET						
<u>ASSETS</u>						
CURRENT:						
CASH U.S. GOVERNMENT SECURITIES, ETC. . . .	2301	1851	1225	980	3376	2722
ACCOUNTS RECEIVABLE, NET	2680	2107	2041	1881	3319	2332
INVENTORY	5224	3329	5278	3512	5171	3147
TOTAL CURRENT	10205	7287	8544	6373	11866	8201
FIXED, NET	2790	2232	1950	1879	3629	2586
OTHER	501	452	498	444	504	458
TOTAL ASSETS	13496	9971	10992	8696	15999	11245
FIXED ASSETS, GROSS	4654	4255	3904	4279	5403	4231
<u>LIABILITIES</u>						
CURRENT:						
ACCOUNTS PAYABLE	981	752	408	521	1554	982
NOTES, LOANS, ETC.	468	70	223	139	714	0
TAXES	2827	898	1624	538	4029	1258
OTHER	407	219	414	268	400	172
TOTAL CURRENT	4683	1939	2669	1466	6697	2412
INTERMEDIATE-AND LONG-TERM CREDIT	542	592	334	350	750	833
OWNERS' INVESTMENT:						
CAPITAL STOCK AND CAPITAL SURPLUS	3214	2366	3818	2776	2609	1956
PROFITS RETAINED IN BUSINESS	5057	5074	4171	4104	5943	6044
TOTAL OWNERS' INVESTMENT	8271	7440	7989	6880	8552	8000
TOTAL LIABILITIES	13496	9971	10992	8696	15999	11245

1/ AVERAGE OF DATA FOR 6 FIRMS WITH 500 AND UNDER 2,500 EMPLOYEES; 3 EMPHASIZING THE MANUFACTURE OF STANDARD AND 3 OF SPECIAL MOTORS.

2/ OTHER INCOME HAS BEEN NETTED AGAINST OTHER COSTS; A FIGURE IN PARENTHESIS INDICATES THAT OTHER INCOME EXCEEDED OTHER COSTS.

APPENDIX III: WORKSHEET

CO. NO.	FRS- ELECTRIC MOTORS YEAR EST.	PLANT LOCAT.	PRODUCT	FLOOR SPACE					
YEAR ENDS:									
INCOME STATEMENT ITEMS:									
	YEAR (DOLLARS)				PERCENT				
	1948	1950	1951	1950	1951	1950	1951	1950	1951
1. NET SALES						100.0	100.0		
2. TOTAL COSTS (1-9)									
3. COST OF GOODS SOLD									
4. SELLING AND SHIPPING COSTS									
5. ADMINISTRATIVE AND GENERAL EXPENSES									
6. DEPRECIATION									
7. INTEREST, NET									
8. OTHER COSTS-(INCOME), NET									
9. PROFIT BEFORE INCOME TAXES				100.0	100.0				
10. INCOME TAX									
11. PROFIT AFTER INCOME TAXES									
12. DIVIDENDS, WITHDRAWALS, ETC.									
13. PROFIT RETAINED IN BUSINESS									
BALANCE SHEET ITEMS:									
	END OF YEAR (DOLLARS)			AVERAGE FOR YEAR (DOLLARS)		END OF YEAR			
14. CASH AND GOV. SECURITIES, GROSS									
15. ACCOUNTS RECEIVABLE, NET									
16. INVENTORY, TOTAL									
A. FINISHED									
B. IN-PROCESS									
C. OTHER									
17. OTHER CURRENT ASSETS									
18. TOTAL CURRENT ASSETS									
19. FIXED ASSETS, GROSS									
A. MACHINERY AND EQUIPMENT, GROSS									
20. FIXED ASSETS, NET									
A. MACHINERY AND EQUIPMENT, NET									
B. OTHER, NET									
21. OTHER ASSETS									
22. TOTAL ASSETS								100.0	100.0
23. ACCOUNTS PAYABLE									
24. NOTES PAY. (INC. CUR. PAY ON FUND D.)									
25. TAX LIABILITY									
26. OTHER CURRENT LIABILITIES									
27. TOTAL CURRENT LIABILITIES									
28. FUNDED DEBT									
A. INTERMEDIATE (UNDER 5 YEARS)									
B. LONG-TERM (5 YEARS AND OVER)									
29. OPERATING RESERVES									
30. MISCELLANEOUS LIABILITIES									
31. STOCKS OF SUBSIDIARY COS. (INC. MIN. INT.)									
32. CAPITAL STOCK									
33. CAPITAL SURPLUS									
34. EARNED SURPL/JS									
35. SURPLUS RESERVES									
36. NET WORTH									
37. TOTAL LIABILITIES								100.0	100.0
38. EMPLOYEES									
39. WAGES AND SALARIES									
A. BENEFITS									
40. TOTAL TAXES									
A. SOCIAL SECURITY TAXES									