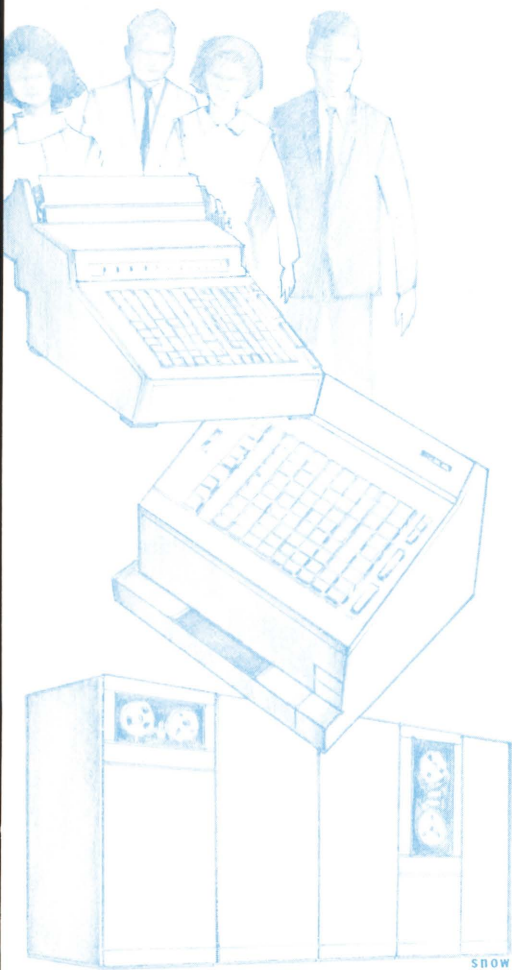


# NEW ENGLAND BUSINESS REVIEW

APRIL  
1967



## Economies of Scale in Commercial Banking

### Part II . . . specialization and technology

This study indicates that in handling checking accounts, economies of scale arise from the use of different kinds of equipment as well as from specialization of labor and machines. In other bank operations, labor specialization accounts for declining unit costs.

## Capital Spending Gain Slows

This year New England manufacturers plan to increase capital spending by 3 percent in contrast with last year's gain of 38 percent.

FEDERAL RESERVE BANK OF BOSTON



## Economies of Scale in Commercial Banking

### Part II . . . specialization and technology

By Frederick W. Bell and Neil B. Murphy

**P**ART I of this series showed that unit costs decline significantly when a bank expands operations without changing the number of its offices. What characteristics of the banking industry account for this decline in unit costs? The evidence in this article suggests that in handling checking accounts economies of scale arise partly from the use of different kinds of equipment and partly from the specialization of labor and machines. For other bank operations the decline in unit costs results almost entirely from labor specialization.

#### Source of Scale Economies

Scale economies result from a more efficient use of some or all inputs — materials, labor, and machines — with an increasing volume of output. For a commercial bank, these economies may arise in two ways. First, increased size may permit a more efficient organization of

resources. For example, in small banks, where volume does not allow specialization, the same machines and workers must often be used for a variety of tasks and cannot specialize in any one aspect of, say, the demand deposit (i.e., checking account) function. Large banks, on the other hand, can divide tasks so that employees and machines can be assigned to one facet of an operation. Hence, the productivity of both capital and labor increases with the scale of operations. Specialization may also lead to a more economical use of materials purchased by the bank.

Second, some types of machines such as computers are economically feasible only for large firms. Therefore, depending on their size, banks use different kinds of machines with varying efficiencies.

The ability of some banks to handle large loans and checking accounts is sometimes cited as a reason for declining unit costs. Certainly a \$100,000 loan does not require 100 times more

**The New England Business Review is produced in the Research Department. The authors will be glad to receive comments on their articles.**

paper work and processing than a \$1,000 loan. In many cases, the larger loan may require no more credit work than the smaller one. The dollar value of business handled is not a measure of physical output and is, therefore, excluded from consideration. In the statistical analysis for this study, the average dollar value of accounts was held constant and therefore did not influence the measures of economies of scale identified here.

### Bank Size and Labor, Capital, and Material Costs

To determine the source of the economies of scale, the total direct cost of each bank function was divided into three components:

1. wages, including salaries and fringe benefits for all employees and officers;
2. capital, including depreciation and rentals on furniture and equipment;
3. "materials," which include all other miscellaneous expenses such as postage, telephone, office supplies, books, and printing.

Each of these cost components (adjusted for input price variations among banks) was related to bank size. In this manner the volume of each input was related to the volume of output. Obviously each component increased with bank size. However, the question to be answered in this study is: which components rose less than proportionately as the physical volume of business increased in a bank, *holding constant other statistically measurable factors which might influence cost, including the number of branch offices?*

### Analysis by Function

As in Part I of this series, the principal fund supplying function — demand deposits — and an important fund using function — business loans — are analyzed.

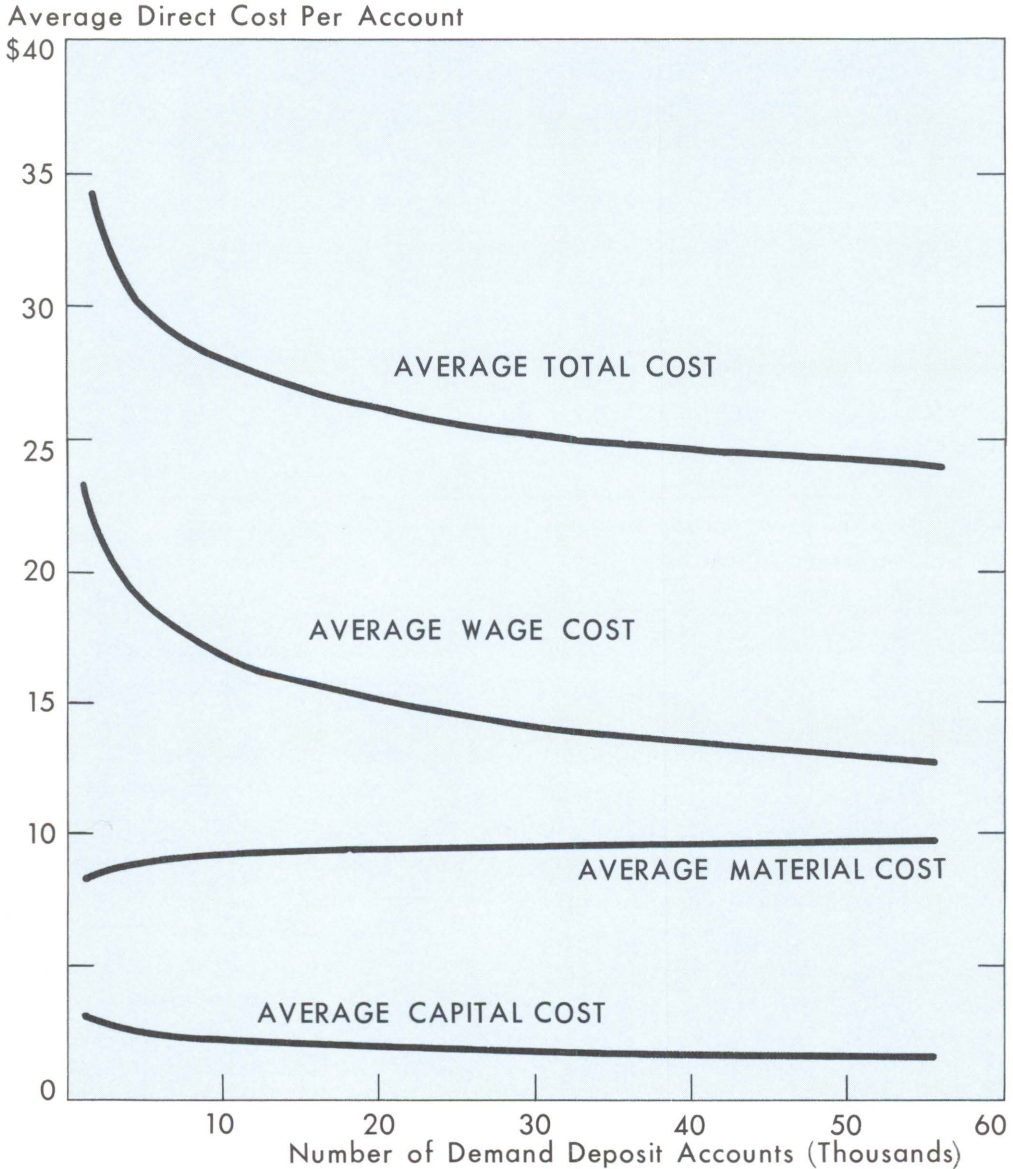
**DEMAND DEPOSITS** — This unique product of commercial banking shows economies of scale. Wage costs in this function comprise about 67 percent of total direct cost, while material and capital amount to 22 and 11 percent of cost respectively. Statistical analysis of 283 Functional Cost banks showed that a 10 percent rise in the number of demand deposit accounts required approximately an 8.6 percent increase in both the capital and labor employed in that function. For example, a bank processing 1,000 accounts per year required 5.4 employees while a bank handling 50,000 accounts used only 3.3 workers for every 1,000 accounts. Thus, large banks require relatively less labor and capital to handle a demand deposit account, as shown in Chart 1. Size, however, does not produce economies in the use of materials. In fact, these rise slightly as the scale of operations increases. Therefore, economies of scale in the demand deposit function appear to result from more efficient use of capital and labor.

**BUSINESS LOANS** — This function is labor intensive when compared with demand deposits. In the business loan function wage, material, and capital expenses comprise 76, 21, and 3 percent of total direct cost respectively. Chart 2 on page 7 shows that in this function economies of scale are due primarily to more efficient use of labor and materials. That is, a 10 percent increase in the number of business loan accounts requires a 9.2 percent increase in labor and materials. Capital requirements, however, do increase slightly with bank size, a fact which suggests that larger banks are processing business loan accounts with automatic equipment.

**REMAINING FUNCTIONS** — Two functions — real estate loans and administration — economize on all three factors as bank size increases.

Chart 1

**RELATION BETWEEN AVERAGE WAGE, CAPITAL AND MATERIAL COST, WITH THE NUMBER OF DEMAND DEPOSIT ACCOUNTS, ANNUAL BASIS, 1965**



\* ALL OTHER VARIABLES WHICH AFFECT COSTS ARE HELD CONSTANT AT THEIR GEOMETRIC MEAN VALUES FOR THE SAMPLE.

In the instalment loan function economies of scale are evident for capital and labor, but material costs increase with the number of accounts. The trust, business development, and securities functions economize on labor and materials but are subject to rising capital costs. Finally, in the two functions showing no overall economies of scale — time and safe deposits — increased size results in some small economies in the use of materials.

### Technology and Bank Size

To determine changes in technology that occur as bank size increases, the Federal Reserve Bank of Boston sent questionnaires to 104 New England banks that participated in the Functional Cost Program. Fifty-three usable replies were received. Based on this information, an inventory was made of all major machines used<sup>1</sup> and an estimate obtained of annual machine time for each type of machine — distributed by bank function.

<sup>1</sup> Major machines were restricted to the categories in Table 1. For a description see the note at the end of the article.

Table 1 shows the average number of machines per bank by asset size. In this survey computers and punch card tabulating machines were used only in the very largest banks (over \$100 million in assets). The number of trionics and conventional bookkeeping machines increased with bank size up to those with \$100 million in assets. Other machines, such as those for window posting and proof, were used in all banks, and the number increased with size.

Table 2 indicates how the time of the various machines was allocated by bank function. Conventional bookkeeping machines are the most versatile and were used in practically every bank operation. In many small banks, the same conventional bookkeeping machines were used for time and demand deposits as well as for all loan functions. This may detract from their overall efficiency. In contrast, trionics machines were more specialized with more than 97 percent of their time devoted to demand deposit accounting.

**Table 1**  
**AVERAGE NUMBER OF MACHINES PER BANK BY ASSET SIZE**

Type of Machinery	Asset Size (\$ Millions)					
	0-5	5-10	10-20	20-50	50-100	over 100
Conventional	2.00	1.35	2.08	1.77	5.20	3.25
Trionics	1.67	1.45	2.58	5.15	5.20	0.25
Computer	0.00	0.00	0.00	0.00	0.20	1.25
Punch Card and Tabulating Equipment <sup>a</sup>	0.00	0.00	0.00	0.02	1.80	10.00
Computerized Check Handling Equipment	0.00	0.00	0.00	0.00	0.20	2.75
Window Posting	3.33	2.80	3.83	5.77	11.00	27.25
Proof Machines <sup>b</sup>	1.33	1.40	1.67	3.31	6.60	21.75

<sup>a</sup> Includes tabulator, key punch, collator, verifier and sorter.

<sup>b</sup> Includes proof machine, check encoder and proof inscriber.

Source: Federal Reserve Bank of Boston.

**Table 2**  
**PERCENTAGE DISTRIBUTION OF ANNUAL MACHINE TIME BY BANK FUNCTION**

Function	Type of Machine						
	Conventional	Tronics	Computer	Punch Card <sup>a</sup>	Computer Equipment	Window Posting	Proof <sup>b</sup>
Demand Deposits	34.89%	97.19%	65.03%	27.91%	96.32%	60.55%	98.29%
Time Deposits	4.66	0.83	3.74	5.66	0.45	26.00	0.68
Real Estate Loans	4.76	0.52	0.14	0.18	0.00	2.67	0.24
Instalment Loans	14.39	0.09	10.73	16.75	0.00	9.48	0.51
Business Loans	17.51	0.41	0.00	0.37	0.00	1.30	0.28
Securities	0.16	0.00	0.00	0.00	0.00	—	—
Trust Department	11.31	0.51	5.61	30.48	0.00	—	—
Safe Deposit	0.06	0.01	0.11	—	0.00	—	—
Business Development	—	—	4.18	5.75	2.44	—	—
Administration	12.01	0.38	10.44	9.08	0.80	—	—

<sup>a</sup> Includes tabulator, key punch, collator, verifier and sorter.

<sup>b</sup> Includes proof machine, check encoder and proof inscriber.

Source: Federal Reserve Bank of Boston.

### Technology and Demand Deposits

In commercial banks, the most capital intensive function is that of demand deposits.<sup>2</sup> Not only is it capital intensive as compared with other banking functions but also as compared with manufacturing. In the demand deposit function, the value of major machinery per banking employee (including officers) was almost \$3,200, considerably higher than the average of \$2,200 for all manufacturing employees. In fact, about three-quarters of all bank machinery was used in this function. Thus, the commonly-held notion that banking is a labor intensive industry is not necessarily true but depends on the particular bank operation. In contrast to demand deposits, all bank loan functions were quite labor intensive with

<sup>2</sup> In this article, capital refers to the value of machinery used in banking. Thus, capital intensive means relatively high value of machinery per employee.

machinery investment per employee for instalment, real estate, and business loans amounting to \$783, \$495, and \$427 respectively.

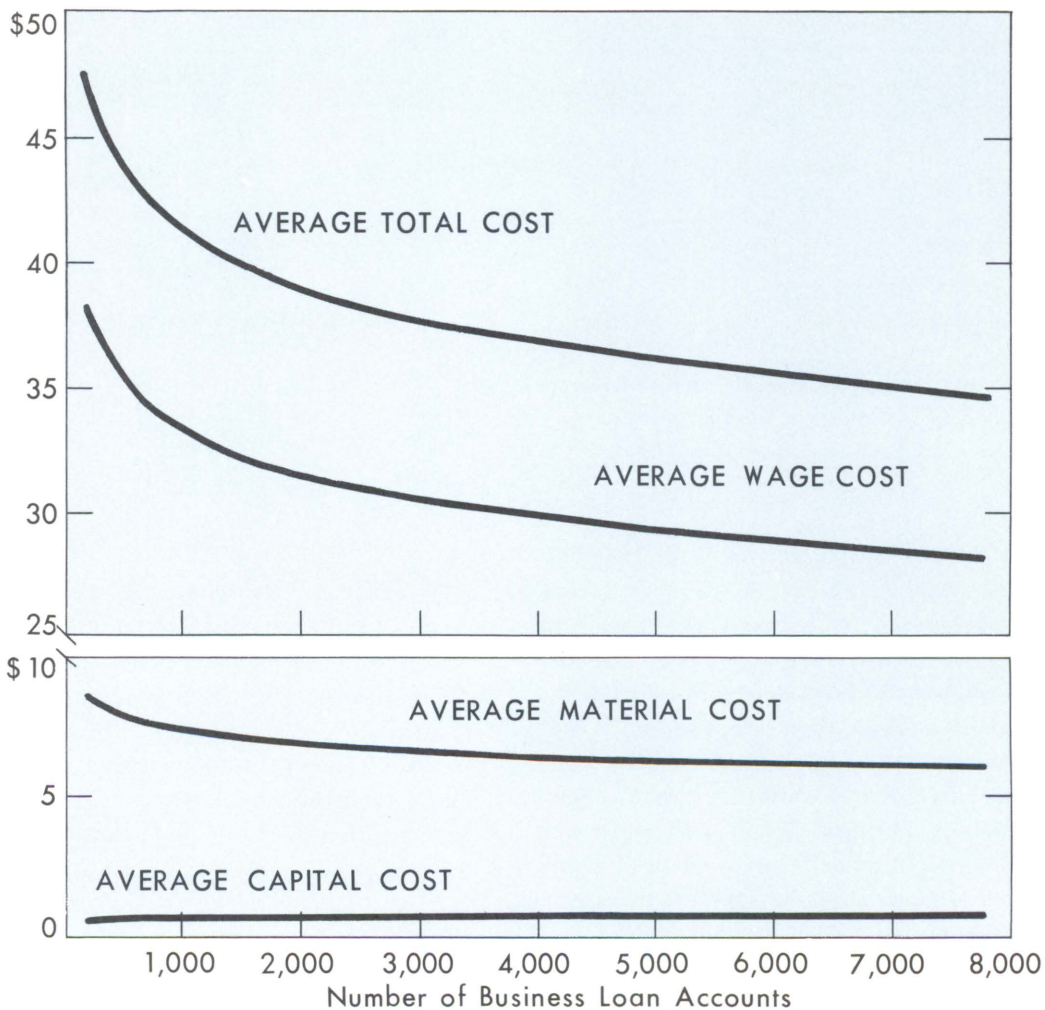
The demand deposit operation was the only bank function in which the types of equipment used changed markedly as bank size increased. Table 3 shows the transition from conventional machines to tronics, and then to computers for larger banks. Statistical analysis of the sample banks showed that the annual average number of accounts per employee with the various types of equipment is as follows:

<i>Type of Equipment</i>	<i>Accounts per Employee</i>
Conventional Bookkeeping	218
Tronics	242
Computer	260

Three reasons explain why the use of the computer did not result in substantially higher

Chart 2  
RELATION BETWEEN AVERAGE WAGE, CAPITAL AND MATERIAL  
COST, WITH THE NUMBER OF BUSINESS LOAN ACCOUNTS,  
ANNUAL BASIS, 1965

Average Direct Cost Per Account



\* ALL OTHER VARIABLES WHICH AFFECT COSTS ARE HELD CONSTANT AT THEIR GEOMETRIC MEAN VALUES FOR THE SAMPLE.

**Table 3**  
**AVERAGE NUMBER OF MACHINE HOURS PER BANK FOR DEMAND DEPOSITS**

Type of Machinery	Number of Demand Deposit Accounts				
	0 to 2,500	2,500 to 5,000	5,000 to 7,500	7,500 to 12,500	over 12,500
Conventional	1,146	816	652	565	0
Tronics	339	2,234	3,544	5,686	2,664
Computer	0	0	0	0	1,275
Punch Card <sup>a</sup>	0	0	260	0	1,496
Computerized Check Handling Equipment	0	0	0	0	1,124
Window Posting	212	1,605	0	5,254	7,213
Proof Machines <sup>b</sup>	1,200	2,127	3,368	5,745	17,679

<sup>a</sup> Includes tabulator, key punch, collator, verifier and sorter.

<sup>b</sup> Includes proof machine, check encoder and proof inscriber.

Source: Federal Reserve Bank of Boston.

output than the other machines. First, most computer operations are relatively new and tend to become more efficient as the staff grows more experienced. Second, the 10 largest banks in the New England region were not included in the survey. These larger banks may have attained greater productivity than the reporting intermediate-sized banks. Third, the computer was used primarily in accounting and therefore did not significantly affect the productivity of many employees such as tellers and key punch operators.

The change in technology did not account for all the economies of scale in the demand deposit function. For example, in a bank with 500 accounts, one employee handled 218 demand deposit accounts a year. When bank size increased to 50,000 accounts, output per employee grew to 348 accounts, a rise of 59 per-

cent. As the previous table shows, however, the shift in technology (conventional machines to tronics and then to computers) produced an increase from 218 to 260 accounts, or 19 percent. Thus, the change in technology accounted for one-third of the economies. The balance is probably due to specialization of management and labor in other aspects of the demand deposit function such as proof and transit operations.

### **The Cost of Branching: A Greater Labor Requirement**

As Part I of this series indicated, banks able to expand their volume of business without changing the number of their offices can usually achieve lower unit costs. If, however, expansion occurs by adding branches, these savings are largely offset by the higher unit costs of branch operations. The latter presumably result from the necessity of duplicating in each



branch those operations which might be consolidated under one roof.

The higher costs of branching are not necessarily detrimental either to banks or to consumers. For banks, maximum profits depend on operating revenue as well as on cost, and branching may represent the most feasible method for expanding business and revenues. For consumers, saving of time, parking, etc., as a result of locational convenience and additional facilities probably offset any added costs due to branching.

To measure the additional costs which are incurred when a bank adds offices, the labor, capital, and material costs for each banking function were analyzed separately. Statistical

analysis of the 283 Functional Cost banks showed that for the same volume of accounts in the time deposit, instalment, real estate, business loan and deposit functions, banks with more branches used proportionally more labor than banks with fewer branches. In the demand deposit function, banks with branches used relatively more labor and capital equipment. Material expenses were virtually the same for unit and branch systems.

Table 4 is a hypothetical example comparing a unit bank with a three-branch system where both operate at the same output. A unit bank would require about 28 employees (including officers) to process 8,000 demand deposit accounts per year. If the same number of ac-

**TABLE 4**  
**COMPARISON OF THE NUMBER OF EMPLOYEES REQUIRED FOR A UNIT AND A THREE-BRANCH COMMERCIAL BANK OPERATING AT THE SAME SCALE LEVEL**

Function	Level of Output (Accounts) <sup>a</sup>	Employees Required <sup>c</sup>		Additional Requirement of 3-Branch System
		Unit	3-Branch	
<b>Fund Supplying</b>				
Demand Deposits	8,000	28.30	35.37	25.0%
Time Deposits	11,000	3.06	4.04	32.0
<b>Fund Using</b>				
Real Estate Loans	500	1.24	2.04	64.5
Instalment Loans	4,000	6.40	8.10	26.6
Business Loans	1,200	3.36	4.13	22.9
<b>Other</b>				
Safe Deposit	1,600 <sup>b</sup>	0.78	1.15	47.4

<sup>a</sup> Geometric mean of sample banks.

<sup>b</sup> Number of boxes rented.

<sup>c</sup> Including officers.

Source: Federal Reserve Bank of Boston.

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counts were handled by a head office and two branches, about 35 employees would be needed, representing a 25 percent increase. Thus, the greater labor requirements of branching offset the economies of scale which permit specialization in many functions and thus reduce the number of employees needed.

### **Conclusion**

Economies of scale are evident in commercial banking and arise through specialization of labor or machines, or both. Of all commercial banking functions, demand deposits make the greatest use of machines. The kind of machinery used for this function changes with the level of output. Productivity differences among the machines contribute to the economies of scale. Except for demand deposits, banking functions are relatively labor intensive, with scale economies resulting predominantly from labor specialization. As more operations become computerized, these functions may grow more capital intensive. Finally, branching operations are essentially more costly because of the additional personnel required.

### **NOTE ON BANK MACHINERY**

**Window Posting Machines** print a receipt or record in the customer's savings account passbook and simultaneously post the bank's ledger card. They are also used in proving demand deposits and may record mortgage and instalment loan payments.

**Conventional Bookkeeping Machines** are members of the adding machine family but also have some typewriter blood in them. Bookkeeping machines can enter dates, symbols, and numbers on ledger cards. The operator inserts the card into the machine, picks up the old balance, deducts checks, adds deposits, and the machine computes and prints a new balance.

**Electronic Bookkeeping Machines** usually are known as "tronics." Checking account statements processed by tronics have black stripes on the back. These stripes contain finely powdered iron and carry information in the form of magnetic charges. A ledger card — part of which becomes a statement — is inserted into the machine, and the operator keys in the account number from a check or deposit ticket. The machine compares this number to the one it reads from the magnetic stripes to make sure the right account is being posted. After automatically picking up the old balance from the stripes, the machine either adds or subtracts the entry, computes a new balance and magnetizes it on the stripes.

**Proof Machines** are used for sorting. The operator takes a mixed-up pile of documents and drops them one-by-one in the proper pocket or bin in the machine. The operator indexes the amount of each document on the keyboard and the machine tabulates the total in each pocket as well as a grand total.

**Punch Card Tabulating Machines** derive their information from holes punched on cards. The machines are then used to sort and tabulate the information.

**Check Encoders or Inscribers** are used to code checks properly.

**Electronic Computers** can do in less than a second a job that would take the fastest clerk a week to do by hand. They can post demand deposit accounts. The account number, the amount of the item, and whether it is a debit or a credit are magnetized on tape. The tape is run into the machine with another showing yesterday's account balances. The machine

matches the account numbers, deducts checks, adds deposits, strikes a new balance and magnetizes it on another tape — all in the wink of an eye. The machine also can be instructed to

handle checks on which payment has been stopped, and those with insufficient funds. Computers have potentially wide application to practically all bank functions.

## Capital Spending Gain Slows

by Edwin F. Estle

**N**EW England manufacturers plan to raise capital outlays this year 3 percent above last year's total to a record \$1.1 billion. The gain expected this year follows an imposing 38 percent rise registered last year over 1965's level.

This year's spending increase is expected to occur in the region's durable goods industries. The impetus for this advance comes from the large increase in defense orders many of them have received in the past year. For example, prime defense contract awards to regional firms rose 37 percent in calendar 1966 over contract levels in 1965. This has exerted pressure upon existing capacity and has generated optimistic sales expectations in these industries.

Durable goods producers currently are operating their facilities at an 88 percent rate, 3 percentage points below their preferred rate. Expecting sales this year to rise almost a tenth, they are planning to advance capital outlays 12 percent.

Manufacturers of nondurable goods, on the other hand, have less pressure on their existing capacity. They are operating at only 85 percent of capacity, whereas their preferred rate is 95 percent. Moreover, they are less optimistic

concerning 1967 sales, anticipating an advance of 7 percent. New plant and equipment expenditures in these soft goods industries are expected, therefore, to decline 9 percent from last year's high level.

These expectations are based on replies from 900 regional manufacturers. They responded to a questionnaire survey conducted by the Federal Reserve Bank of Boston in February and March of this year. The respondents account for one-third of all manufacturing employment in the region.

### Proposed Investment Tax Credit

On March 10 of this year the Administration proposed that the 7 percent investment tax credit, which was discontinued last September, be reinstated. All but 15 percent of the Bank's respondents had replied prior to the proposal. However, those that replied after the announcement show the same spending pattern as those that returned questionnaires earlier. Spot surveys nationally have also failed to disclose any major shift in immediate spending plans due to the proposed reinstatement of the tax credit.

No doubt businessmen will reexamine their spending plans. However, substantial changes in 1967 spending because of the reinstatement

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proposal are unlikely. The controlling factor is more likely to be the course of business in the months to come. The Bank's survey indicates that manufacturers have based their spending plans on their capacity situation and their sales outlook. If these factors change substantially in the months ahead, spending plans will tend to change also.

### **Region's Spending Compared with Nation's**

Manufacturers nationally, according to a Department of Commerce-Securities and Exchange Commission survey in January and February, plan to raise outlays 3.5 percent. This rate of increase for total spending is similar to that found for the region. However, the rates are very different for the durable and nondurable goods sectors. Nationwide, durable goods producers plan to raise outlays at less than half the rate, 4.6 percent, of durable goods firms in the region. Manufacturers of nondurable goods in the Nation expect to increase outlays 2 percent, whereas a 9 percent decline is anticipated in New England.

Sales expectations of durable goods manufacturers nationally are less optimistic than their counterparts in the region. The national outlook is for an 8 percent gain this year, compared to 9 percent expected sales advance in New England. Sales anticipations for nondurable goods are, on the other hand, identical in the two areas. Producers in both areas look for a 7 percent increase.

Last year spending for new plant and equipment rose relatively faster in the region than in the Nation. New England manufacturers raised outlays almost two-fifths last year, whereas the national increase was one-fifth.

### **Expansion Expenditures**

Last year New England manufacturers allocated more of their capital outlays to expansion than to replacement of plant and equipment. As a proportion of total outlays, expansion expenditures went from 47 percent in 1965 to 53 percent last year.

Fourteen of the region's nineteen major industries increased their outlays for expansion last year. Total expansion outlays rose 61 percent as firms rushed to meet the strong demand for goods and to relieve the pressure on existing capacity. This year expansion expenditures are expected to decline 2 percent. A cutback of two-thirds is scheduled in the paper industry and a decline of one-fifth in fabricated metals. These large declines are offset to a great extent by increases in expansion expenditures of one-fourth in the food industry, one-fourth in electrical and nonelectrical machinery, and almost one-fifth in the rubber and plastics industry. If present plans are realized expansion expenditures will account for 50 percent of total outlays this year.

### **Plant Expenditures**

Much of last year's expansion was in the form of new plant construction. Expenditures for new plants in the region were twice the 1965 level.

This year outlays for new buildings will decline by almost a tenth with most of the reduction occurring among the nondurable goods industries.

The durable goods industries doubled outlays for new plant last year with every industry participating in the increase. This year plant expenditures are expected to rise an eighth with the increase occurring in only 6 of the 10 durable goods industries.

**CAPITAL SPENDING PLANS OF NEW ENGLAND MANUFACTURERS  
1967 TOTAL EXPENDITURES**

Industry	1966 Actual (\$ Millions)	1967 Planned (\$ Millions)	Percent Change from 1966
ALL MANUFACTURING	\$1,118.2	\$1148.8	+ 3%
Durable Goods	626.4	702.7	+12
Primary Metals	63.7	73.3	+15
Fabricated Metals	81.6	88.8	+ 9
Machinery	122.0	137.4	+13
Electrical Machinery	115.6	146.1	+26
Transportation Equipment	132.7	144.3	+ 9
Instruments	52.6	60.1	+14
All Other Durables	58.2	52.7	-10
Nondurable Goods	491.8	446.1	- 9
Food	52.5	60.2	+15
Textiles	46.2	40.6	-12
Paper	155.5	109.7	-29
Printing	62.0	59.3	- 4
Chemicals	42.6	34.4	-19
Rubber and Plastics	57.4	67.2	+17
Shoes	29.2	26.5	- 9
All Other Nondurables	46.2	48.3	+ 4

Source: Federal Reserve Bank of Boston survey.

Note: Detail may not add to total due to rounding.

In 1966 the nondurable goods industries also doubled their plant expenditures over 1965's level. Only the food industry failed to participate in this group's spending surge. This year plant spending in the nondurable goods group will fall 29 percent, with only three industries — food, apparel, and rubber — planning to advance outlays.

Thus, virtually every industry participated in last year's building boom, whereas this year plans are quite divergent. Sales expectations vary more among the industries this year than last. The deviation in sales expectations between regional industries is two-thirds greater this year.

### Sources of Financing

Internal sources such as retained earnings and depreciation allowances were expected to provide almost nine-tenths of last year's capital spending funds when plans were reported to the Bank in the spring of 1966. This spring's survey shows, however, that only four-fifths was financed from internal sources. Current plans for this year are to finance about 84 percent of outlays internally.

Most of the external financing last year was achieved through borrowing. The same is expected to be true this year. Virtually no financing occurred through new stock issues last year, and less than 1 percent of outlays will be

financed in this manner in 1967.

Leasing arrangements accounted for 6 percent of all financing last year. They were, however, quite important in the ordnance and paper industries where they accounted for a fifth or more of all funds. This year leasing of plant and equipment will amount to 3 percent of total financing, with the ordnance industry continuing to use such arrangements extensively, but with virtually no leasing occurring in the paper industry. The printing industry plans to up its lease financing from 2 percent of the total last year to 10 percent this year.

### Industry Plans

Four durable goods industries — primary metals, electrical and nonelectrical machinery, and transportation equipment — plan to raise outlays a tenth or more in the current year. All of them look for sales to advance at least 8 percent. The transportation equipment industry, moreover, is operating at a very high capacity utilization rate, 4 percentage points above its preferred level, because of the surge of defense orders.

The region's fabricated metals industry boosted its capital outlays 40 percent last year. They are scheduled to rise 9 percent further this year. The spending this year, however, will be directed to replacement of obsolete plants rather than to expansion. The industry is operating 5 percentage points below its optimum rate and has relatively modest sales expectations of a 6 percent rise in 1967.

Manufacturers of instruments look for their sales to rise 8 percent this year. Consequently, they plan an increase in 1967 outlays of 14 percent, following a rise of 12 percent last year. The industry is, moreover, shifting its

spending to expansion purposes. Outlays for expansion will advance almost three-fourths this year to account for 60 percent of all spending.

Textiles, paper, printing, shoes and chemicals will account for the 9 percent decline in non-durable goods spending this year. The other soft goods industries as a group are planning to up outlays by about one-fifth.

The paper industry expects 1967 outlays to fall 29 percent because of the completion of a number of large expansion projects. If the industry's sales expectations, a 9 percent gain this year, show signs of being realized, however, spending plans might be revised upward. Regional producers are currently operating at 93 percent of capacity, compared to a preference for operating at 97 percent.

Textile manufacturers, with substantial excess capacity and the expectation of no change in sales this year, are planning to reduce outlays 12 percent. Production has been declining in the region since last April with the current output level, seasonally adjusted, 8 percent below the April peak.

Producers of rubber and plastic products advanced their capital spending 20 percent last year. This year they expect to advance outlays 17 percent further. They are currently operating at a very high level, at 88 percent of capacity as compared to a preferred rate of 90 percent.

The region's shoe industry expects its sales to advance only 4 percent this year. Consequently, it is scheduling plant and equipment expenditures of \$26 million, or 9 percent less than last year.

### Carryover of Plans

Over one-sixth of this year's total spending will be a carryover of plans originally formulated for last year. Of this carryover almost two-fifths is for new plant spending. These are larger proportions than those found a year ago in regard to 1966 spending. This year's carryover is concentrated in the durable goods group — three-fourths of the total — and particularly in the fabricated metals and non-electrical machinery industries — one-half of the total.

### The Outlook for Revision

The region's durable goods industries that are tied to defense production are likely, with their high backlog of orders, to maintain or even to revise upward their capital spending plans for this year. The durable goods industries that depend to a greater extent on non-defense markets, such as lumber, furniture, and stone, clay and glass, foresee a slow year and are, therefore, holding spending down. If, however, home building revives and consumer spending advances sharply, they will probably find it necessary to revise their spending plans upward.

Much the same can be said for the nondurable goods industries as for this latter group of durable goods industries. Consumer spending holds the key to their spending plans. Only three industries in the soft goods group are

operating at a rate above last year's level. Some of the others, particularly leather products and miscellaneous, have considerable excess capacity. This last group will not advance spending unless sales swing sharply upward. The reinstatement of the tax credit may cause them to react more promptly to a rise in sales, but it will not be a controlling factor.

Excessive inventories do not seem to be a major problem for New England businessmen. The New England Purchasing Agents Association reports indicate that efforts to reduce inventories have been going on for the past 3 or 4 months. For example, the proportion of purchasing agents reporting higher work-in-process inventories has been below year-ago levels since last September. Moreover, the proportion reporting higher finished goods inventories is currently at year-ago levels. Northeastern University's Bureau of Business and Economic Research reported in March further evidence that regional inventories are under control. Its survey indicated that excessively high inventory stocks exist in only about one-sixth of the companies surveyed, while one-fourth said their inventories were on the low side. Thus, if orders remain at good levels, production should advance, putting pressure on existing capacity.

On balance, therefore, this year is likely to be one of some advance in capital outlays but will not duplicate the surge of last year.

**Here's New England -**

MANUFACTURING INDEXES (seasonally adjusted) 1957-59 = 100	NEW ENGLAND			UNITED STATES		
	pFeb. '67	Jan. '67	Feb. '66 <sup>r</sup>	Feb. '67	Jan. '67	Feb. '66
All Manufacturing	147	151	143	158	160	155
Nonelectrical Machinery	170	180	161	187	191	174
Electrical Machinery	171	175	156	184	187	179
Transportation Equipment	153	164	160	159	165	164
<i>Textiles, Apparel, Leather</i>	105	107	110	135	139	140
Textiles	101	102	107	137	139	141
Apparel	112	118	121	n.a.	148	148
Leather and Shoes	105	104	105	n.a.	108	110
Paper	140	139	136	152	154	148
<b>BANKING AND CREDIT</b>	Percent Change From:			Percent Change From:		
Commercial and Industrial Loans (\$ millions) (Weekly Reporting Member Banks)	Feb. '67	Jan. '67	Feb. '66	Feb. '67	Jan. '67	Feb. '66
	2,523	- 1	+13	60,323	- 1	+13
Deposits (\$ millions) (Weekly Reporting Member Banks)	7,310	+ 2	+11	182,059	0	+ 5
Check Payments (\$ billions) (Selected Metropolitan Areas)*	234.1	- 4	+ 9	3,570.2	0	+ 8
Consumer Installment Credit Outstanding (index, seas. adj. 1957-59 = 100)	177.7	0	+ 6	220.6	+ 1	+ 8
<b>DEPARTMENT STORE SALES</b> (index, seas. adj. 1957-59 = 100)	133	- 6	- 2	n.a.	n.a.	n.a.
<b>EMPLOYMENT, PRICES, MAN-HOURS &amp; EARNINGS</b>						
Nonagricultural Employment (thousands)	4,165	0	+ 4	64,283	0	+ 4
Insured Unemployment (thousands) (excl. R.R. and temporary programs)	110	- 1	- 5	1,597	+ 1	- 2
Consumer Prices (index, 1957-59 = 100) (Mass.)	115.1	0	+ 2	114.8	0	+ 3
Production-Worker Man-Hours (index, 1957-59 = 100)	105.5	- 3	+ 1	113.7	- 2	0
Weekly Earnings in Manufacturing (\$) (Mass.)	104.54	- 2	+ 2	111.48	- 1	+ 1
<b>OTHER INDICATORS</b>						
<i>Total Construction Contract Awards** (\$ thous.)</i>	149,605	-10	-11	3,109,046	- 2	-13
Residential	47,793	-18	-17	965,431	- 1	-31
Nonresidential	77,705	- 3	- 6	1,321,206	0	- 1
Public Works and Utilities	24,107	- 8	-13	822,409	- 6	- 3
Electrical Energy Production (4 weeks ending Feb. 25) (index, seas. adj. 1957-59 = 100)	177	+ 2	+ 9	182	+ 1	+ 5
Business Failures (number)	64	-14	+49	1,216	+ 2	+29
New Business Incorporations (number)	769	-37	- 6	15,225	-19	- 8

\*Seasonally adjusted annual rates.

\*\*3-mos. moving averages — Dec., Jan., Feb.

p = preliminary

n.a. = not available

r = revised figures. These include new seasonal adjustments, new productivity ratios based on the 1963 Census of Manufactures, and revised New England and United States man-hour statistics. Revised indices from July 1960 are available on request.