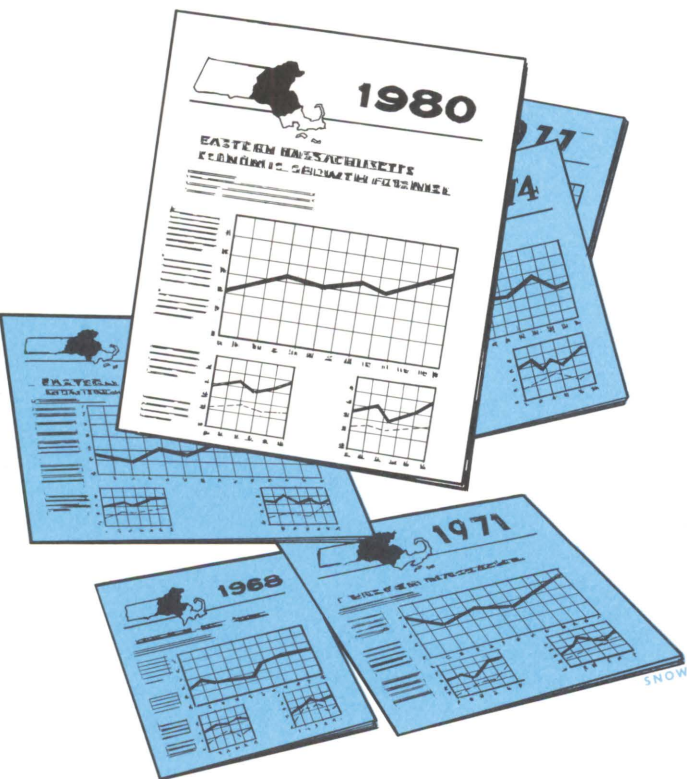


NEW ENGLAND BUSINESS REVIEW

AUGUST
1966



Forecasting Economic Growth for Eastern Massachusetts

Forecasts to 1980 anticipate a shortage of skilled personnel and a shift to faster growing industries.

A Time for Testing . . .

New England business in the 1966 second quarter

Intense demands and prosperity continue although some symptoms of easing were present.

FEDERAL RESERVE BANK OF BOSTON



NEW ENGLAND BUSINESS REVIEW

Forecasting Economic Growth for Eastern Massachusetts

LONG-TERM economic forecasts for Eastern Massachusetts anticipate a substantial shortage of professional, managerial, and technical personnel in the region. To alleviate this problem, the region's employers may have to attract highly trained people from other areas or upgrade the skills of the native labor force.

The forecasts also suggest that the regional share of national production in many industries will decline. Despite this, however, the shift to faster growing industries will allow Eastern Massachusetts to achieve a higher growth rate than in the postwar period and one closer to the Nation's. Eastern Massachusetts is defined as 152 cities and towns within a 35-mile radius of downtown Boston and represents a commuting labor market.

The New England Business Review is produced in the Research Department. Frederick W. Bell was primarily responsible for the article, "Forecasting Economic Growth for Eastern Massachusetts," and Harold F. Price for "A Time for Testing . . . New England business in the 1966 second quarter."

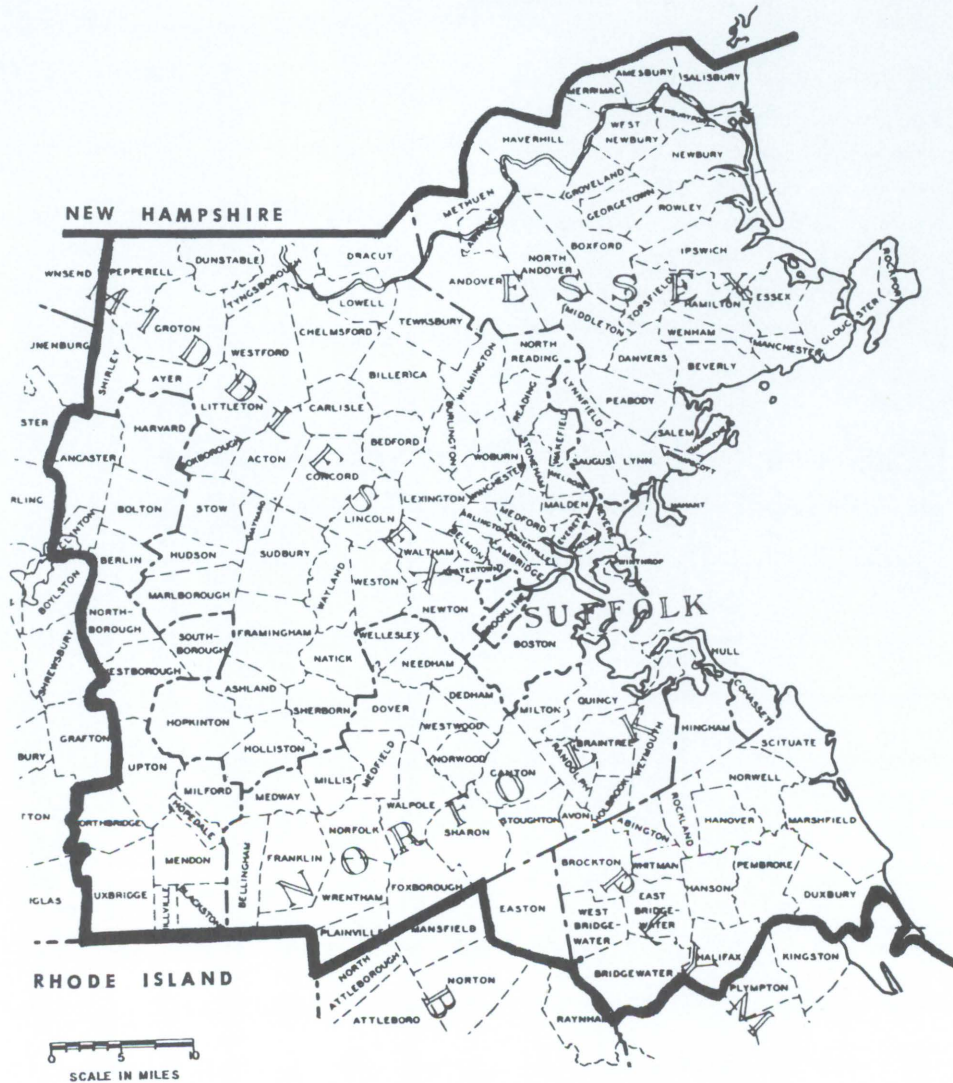
Economic Renaissance, 1947–1963

The projections were made after analysis of economic development in Eastern Massachusetts during 1947–1963. In evaluating industrial growth over that period, a measure of regional output was developed. This is a measure of the market value of goods and services produced in the region minus the cost of imported raw materials. This Gross Regional Product (GRP), a regional equivalent of GNP, was estimated for 110 industry groups. During the period 1947–1963, real GRP for Eastern Massachusetts increased from \$6.35 to \$9.79 billion. This represents a cumulative annual rate of growth of 2.74 percent compared with 3.55 percent for the Nation as a whole.

Economic growth in this period was largely the result of increasing sales to other regions of electronics and communications equipment as well as such services as insurance, private education, medicine, and research and development.¹ These industries were able to develop because of the presence in the region of an

¹ For a similar finding for Massachusetts, see: Frederick W. Bell, "Changing Specialization and Bay State Growth," *New England Business Review*, April 1965.

EASTERN MASSACHUSETTS



adequate supply of well-educated, skilled workers. Because of the decline of textiles and the slow growth of the shoe industry, however, the region's growth rate fell short of the Nation's.

Forecasting GRP — The Technique Used

A region's growth depends primarily on those industries which export goods and services to other parts of the country. Of the 110 industry groups analyzed, 68 were identified as predominantly "export" industries. Their sales are contingent on two factors: national demand, both government and private, and

the region's competitive position.

National Demand

Forecasts of national demand to 1980 for various products were obtained from Resources for the Future and other research agencies. These national demand forecasts were then used to project the varying growth rates for each export industry in Eastern Massachusetts. One factor favorably affecting the region's over-all growth rate is the heavy concentration of its export industries in sectors with very rapidly growing national demand.

**Table I
GROSS REGIONAL PRODUCT AND EMPLOYMENT FOR LEADING EXPORT INDUSTRIES
IN EASTERN MASSACHUSETTS 1947, 1963 AND 1980**

	Gross Regional Product (millions of 1960 dollars)						Employment (thousands of workers)		
	1947		1963		1980 (projected)		1947	1963	1980 (projected)
		Rank		Rank		Rank			
Export Leader									
Electrical Machinery	219.2	2	478.8	1	844.5	1	40.2	55.8	72.5
Nonelectrical Machinery	261.9	1	296.6	2	370.7	4	32.5	29.5	30.7
Insurance Carriers	130.6	5	251.3	3	476.6	2	20.4	30.4	38.6
Instruments	122.7	6	193.9	4	354.3	6	17.4	19.1	20.4
Private Education	68.0	13	182.1	5	360.4	5	16.2	33.8	52.8
Rubber Products	114.1	8	179.6	6	307.1	8	21.7	21.5	20.4
Transportation Equipment	34.4	18	169.2	7	232.9	12	6.1	13.8	11.5
Federal Government Defense - Space	105.4	9	148.7	8	213.2	14	21.6	23.0	26.0
Paper Products	101.8	10	148.3	9	286.8	9	15.4	16.4	20.7
Leather Products	142.5	4	147.9	10	278.6	10	42.5	28.7	33.6
Miscellaneous Manufacturing	48.3	15	132.6	11	451.0	3	5.9	18.2	25.3
Miscellaneous Services	47.5	17	126.6	14	339.3	7	5.2	14.5	36.9
Food Products	121.4	7	118.6	15	120.8	17	16.1	12.5	10.5
Textile Products	147.5	3	71.5	18	89.0	19	48.4	11.6	9.8
Rest of Export Sector	422.6		593.1		1,064.4		61.0	104.5	152.0
Total Export Sector	2,026.7		3,238.8		5,789.6		392.2	433.3	561.6
Local Market Sector	4,326.5		6,548.2		11,260.0		745.3	851.3	1,056.5
Total GRP	6,353.2		9,786.9		17,049.6		1,137.5	1,284.6	1,618.1

Source: Metropolitan Area Planning Council.

The Region's Competitive Position

This growth trend, however, must also be modified by taking account of the competitive position of the region's producers compared with those in other regions — that is, their comparative costs, access to skilled labor, proximity to markets, etc. An examination of the 1947–63 period showed that while all the region's industries except food and textiles increased output, most grew less rapidly than competitors in other sections of the country. In fact, only a third increased or held their

share of national output. Of course, declining share in itself is not necessarily a cause for concern, if a region can absorb increases in its labor force and achieve growth in per capita output and income.

To assess the competitive position of the region, the export industries were grouped according to their dependence on four dominant locational factors. The location of many industries is best explained by *historical accident*. The only apparent economies gained by these

Table II

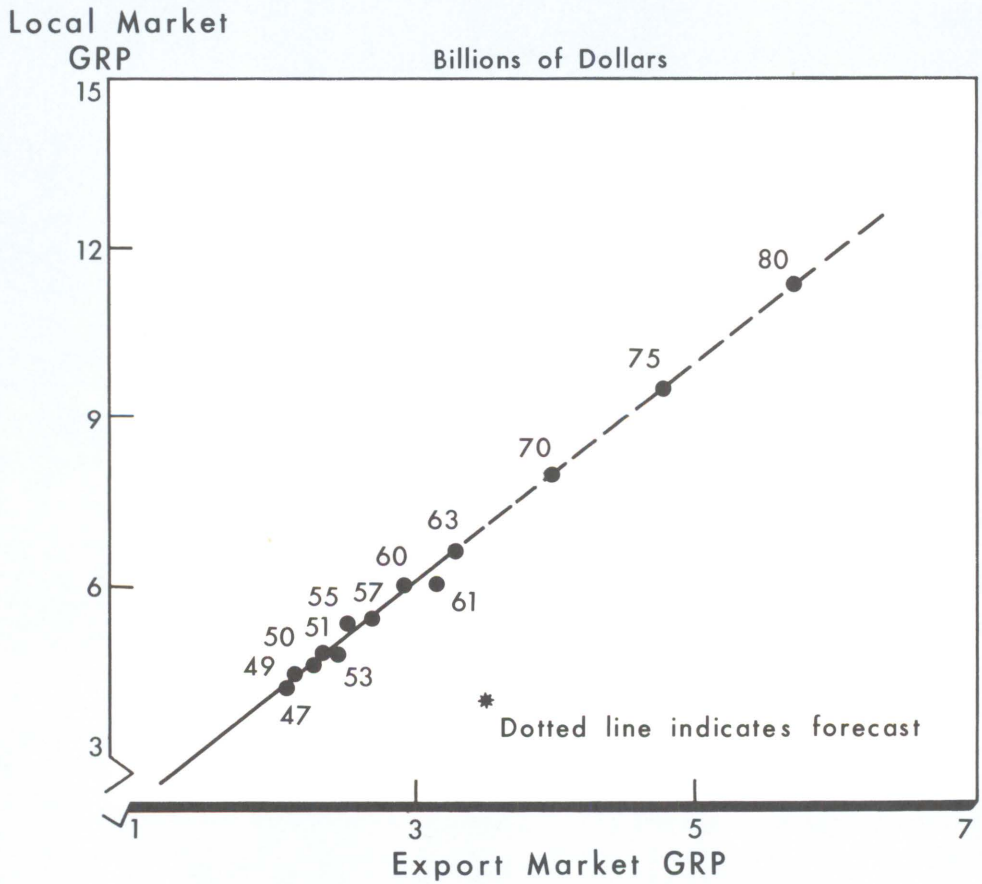
EASTERN MASSACHUSETTS EXPORT INDUSTRIES GROUPED BY PREDOMINANT LOCATIONAL FACTORS . . .

	(Gross Regional Product in Millions of 1960 dollars)		
	1947	1963	Percent Change
HISTORICAL ACCIDENT (No apparent economies from location)	684.2	1081.7	58.1
LABOR . . . (TOTAL) Unskilled and semiskilled (Wage differentials crucial to location)	519.4	778.9	50.0
Skilled (Access to a large pool of highly skilled labor at competitive wage rates)	156.3	87.3	-44.1
TRANSPORTATION (Transport costs the central factor in location)	363.1	691.6	90.5
EXTERNAL ECONOMIES SENSITIVE (Cost savings from close proximity to needed suppliers, specialists)	367.6	465.1	26.5
	157.6	258.8	64.2

Source: Metropolitan Area Planning Council.

Diagram 1

RELATION BETWEEN EXPORT AND LOCAL
MARKET GROSS REGIONAL PRODUCT
FOR EASTERN MASSACHUSETTS



Source: Metropolitan Area Planning Council

Table III
OCCUPATIONAL DISTRIBUTION OF LABOR DEMAND
IN EASTERN MASSACHUSETTS, 1960 AND 1980

(Thousands of Workers)

	1960	1980	Change	
			Absolute	Percent
Professional and Technical	189.8	289.6	+ 99.8	+52.6
Managers, Officials, Proprietors	120.6	145.6	+ 25.0	+20.7
Clerical Workers	232.6	356.0	+123.4	+53.0
Sales Workers	118.1	148.9	+ 30.8	+26.1
Craftsmen and Foremen	167.2	195.8	+ 28.6	+17.1
Operatives	242.7	255.6	+ 12.9	+ 5.3
Service Workers	123.1	158.6	+ 35.5	+28.8
Laborers	42.6	42.1	- 0.5	- 1.2
Other	21.4	25.9	+ 4.5	+21.0
Total Nonagricultural Employment	1,258.1	1,618.1	+360.0	+28.6

Source: Metropolitan Area Planning Council.

industries from their location are specific for the firm such as investment in plant and equipment or in the training of a skilled labor force that would not readily leave the region. For some industries, the cost of moving products to the market or materials to plants are so great that *transport costs* are the critical factor in location. For other industries, *labor requirements* are crucial. Some depend on large numbers of semi-skilled workers; for them wage differentials are particularly important. Others need highly skilled workers such as scientists and engineers. Finally, some industries such as jewelry, silverware, and specialty clothing are characterized by small firms using relatively little machinery. These industries depend

on a host of other suppliers and specialists located in the same area and derive *external economies* by their close proximity to these services.

As Table II shows, industries located in the area because of historical accident are the largest category and accounted for about 40 percent of export GRP over the 1947–1963 period. In the labor sensitive group, the relationship between the skilled and unskilled components is particularly interesting. The unskilled category of the region's output in labor sensitive export industries dropped from 89 to 70 percent over this period. This change undoubtedly reflects the shifting locational advantage of the region from wage- to skill-

sensitive industries, and presumably stems from the presence of the large number of superior educational institutions.

The relatively high rate of growth in the category where transportation was significant for location was largely due to the paper products industry. It serves a large market including New England and the New York Metropolitan area.

In all location categories, most industries have historically experienced a declining share of national production as a result of the movement of population centers to the west and increased competition from low wage areas. Since these trends will presumably continue, the assumption was made that over the projection period most industries would either maintain their 1963 share of national production or experience a slight decline. Only eight export industries are expected to increase their share. However, because increases in national

demand will offset the slight decline in the region's competitive position, exports are expected to rise by almost four-fifths by 1980 and reach about \$6 billion.

In addition, sales by export industries usually generate local market demand for banking, retailing, construction, personal services and others. This now familiar multiplier effect shows that for every \$1 increase in exports in Eastern Massachusetts, local market sales rise by about \$2. Thus, with the projected increase in export income, local market sales will reach \$11.26 billion by 1980, a 79 percent increase over its 1963 value. Output of each local market industry such as trade, electric power etc., was projected on the basis of its historical share of total local market GRP as well as judgment of future growth. Diagram 1 shows the overall relationship between export and local market GRP from 1947 and projections to 1980.

Table IV
LABOR SUPPLY IN EASTERN MASSACHUSETTS
BY AGE AND SEX 1960 AND 1980

(Thousands of Workers)

	1960	1980 (projected)	Change	
			Amount	Percent
Youth under 25	234	404	170	72.6
Adult Men, 25 and over	766	819	53	6.9
Adult Women, 25 and over	389	481	92	23.6
Total Labor Supply	1,389	1,704	315	22.7

Source: Metropolitan Area Planning Council.

GRP and Employment to 1980

Annual growth in GRP for Eastern Massachusetts is expected to increase from its 2.74 percent level of 1947–1963 to 3.32 percent over the period to 1980. This represents an increase of one-fifth, a substantial gain. While this rate of growth will remain below the Nation's, it will be closer to the national average which is projected to grow 4.15 percent annually.

Many changes are expected to take place among the ten leading export industries, although electrical machinery will remain in first place. The insurance industry will become the second largest exporter by 1980 and miscellaneous service industry, closely allied to science-based growth industries, is also expected to show dramatic gains. At the same time, transportation equipment and Federal Government Defense-Space industries will move out of the top ten exporting categories.

Because of increases in labor productivity the anticipated rise in employment will be only about one-third of that in GRP — 26 percent as compared with 74 percent. Total nonagricultural employment is expected to increase from 1,284,600 in 1963 to 1,618,100 in 1980.

The Occupational Structure

In addition to anticipating changes in total employment, projections of skill needs are necessary to show the kinds of jobs that will be available in the region's industries. In making these projections, the historical change in the occupational distribution over the 1950–60 period was applied to employment projections by industry. Therefore, the projected increase in various occupations reflects not only the higher skill requirements within each industry but also the region's shift to higher-skilled industries. Over the 1960–80 period,

the demand for professional and technical workers will grow by about 100,000. About 70 percent of this demand will arise from medical and legal services, private education and government. While manufacturing as a whole will account for a relatively small proportion of these professional workers, certain industries such as electrical machinery, transportation equipment, and instruments will have substantial requirements for these skills.

As shown in Table III, every occupational category except laborers will increase in absolute employment. Only professional and clerical occupations, however, are expected to have a larger proportion of total employment.

Will the Labor Supply be Sufficient?

Population in Eastern Massachusetts is estimated to increase about one-fifth — from 3.5 million in 1963 to 4.2 million in 1980.

The future level of population is determined by births, deaths and in- and out-migration, or net migration. Of these factors birth rates and migration are the most important determinants of both the level and age and sex composition of the population. Detailed analysis of birth rates by age-of-mother led to the assumption that the region would experience moderately low and declining fertility rates which would prevail over the next 14 years.

Based on historical analysis of net migration by age and sex, it was assumed that over the projection period the region would continue to experience net out-migration. In the future it would not be quite as low as that of the 1940–1950 period nor as high as during the decade of the 1950's. During the entire 20 year period, the region experienced a net out-migration of 99,000 residents, presumably owing to slower economic growth in the area. One interesting

aspect of migration is that the region's proportion of nonwhite population is expected to rise from 2.7 percent in 1960 to 4.9 percent in 1980, in response to the assumed continuance of out-migration of whites and in-migration of nonwhites.

Projected changes in the age-sex composition of the population also affect the supply of labor. The projections show that most labor force additions in the next 14 years will be either people under the age of 25 or adult women. These projections assume that the labor force participation rates of women in all age brackets, already higher than the U. S., will increase somewhat. Male participation rates are projected to stay at about their current levels except for workers over 60 years of age where participation rates are expected to decline as a result of withdrawal from the labor force induced by early-retirement programs. Because of the high university enrollment and its growth in the region, labor force participation rates of the college age group are not assumed to increase.

As indicated in Table IV, the increase in male workers over 25 will only be about 53,000, far short of the demand for 125,000 professional, technical, and managerial workers. While some of this need will be for professional women in nursing and teaching, the bulk of the demand will be for males over 25 as the economy will require 29,000 additional foremen and craftsmen by 1980. Of course, various adjustments may occur that would help satisfy the economy's manpower needs.

Avenues of Adjustment

In-migration is one possible way for meeting the growing need for skilled labor. However an inadequate number of men over 25 will not be

a problem peculiar to Eastern Massachusetts; a national shortage is also expected, making recruitment to the region difficult. The possibility of attracting workers from outside will depend on financial incentives and on the available amenities. Thus, the wages of professional and technical personnel in the region may rise relative to those in the Nation as industries attempt to hold or attract additional workers.

This lack of needed personnel may require an upgrading of the region's labor force of young workers and women over 25. Several recently-enacted laws provide substantial funds to meet the needs of quality education and training; among these are the Vocational Education Act of 1964, the Higher Education Act of 1965, Title I of the Economic Opportunity Act, and The Manpower Development and Training Act. Moreover, women may be encouraged to enter many professional and technical fields previously dominated by men.

In addition, financial incentives may attract nonworking women into the labor force and older workers to stay beyond the retirement age. Finally, job tasks may be broken down so they can be performed by less skilled or experienced personnel. Some or all of the adjustments between skill requirements and manpower supply may take place. Nevertheless, it seems reasonable to expect that the region will be plagued by troublesome shortages in many types of skills.

Major Implications

Because of the more rapid growth rate of predicted GRP over the next 14 years, combined with a slower population growth, unemployment rates for the region will fall below 3 percent. Unless the region is able to attract more highly skilled workers, either through

migration, upgrading of the available work force, or an increase in the labor participation rate, an acute shortage of professional and technical personnel may develop. While such workers may receive even higher wages, low skill categories may have a surplus of labor.

On the basis of the population projections, a great increase is needed in the region's educational and recreational facilities. The younger age groups are increasing both absolutely and as a proportion of the total population. This is especially true of the elementary and junior high school age groups. To meet their needs, as many as 156 new schools may have to be constructed in Eastern Massachusetts. Public library facilities, skating rinks and playgrounds will also be needed. It is estimated that 46,000 acres of recreation areas must be added to the region's present facilities. Moreover, although the elderly will decline as a proportion of the population, they will grow in number thus requiring additional health services.

The material in this article was based on studies made by the Metropolitan Area Planning Council. This organization has produced forecasts of population, employment, output, and personal income to the year 2000 for the area described in the article, which is officially known as the Eastern Massachusetts Regional Planning Area. Staff members of the Research Department of this Bank participated in the studies as technical advisers. The Council's full report, Economic Base and Population Study for the Eastern Massachusetts Region, will be available this fall from the Metropolitan Area Planning Council, 44 School Street, Boston.

Over the 1960–80 period, the number of households will grow by 112,000 in Eastern Massachusetts, thus increasing the need for public investment in waste disposal and water systems.

Only by making adequate plans for the future can the region maintain its skilled labor force and attract the needed additional workers. Without such plans, Eastern Massachusetts might fall short of realizing its full potential.

A Time for Testing . . .

New England business in the 1966 second quarter

NEW ENGLAND business for the first quarter of 1966 was analyzed in the May issue of this Business Review under the caption "Prosperity with Anxiety." Now statistics and attitudes afford analysis for the second quarter. Prosperity unmistakably is still with us, enhanced by another three months' economic growth. Anxiety is still with us, intensified in degree but also much broadened in scope.

Anxiety in the first quarter stemmed almost universally from recognition that demands of a highly stimulated economy were overtaking its resources of manpower, materials, productive capacity and available funds. The consequence was upward pressure, actual and threatened, on prices, costs and interest rates. Over most of the economy this upward pressure continued in strong evidence during the second quarter. So anxiety persisted in many minds that the economy, according to the metaphor used, was advancing at an unsustainable pace or was overheating.

But a new form of anxiety developed in some minds early in the second quarter as some statistical indicators hesitated or changed their trends. This new development was limited in its scope, appearing most notably in such national areas as automobile sales, residential construction, and the stock market. Moreover, it showed no alarming symptoms of intensification or spread during the quarter. Nevertheless, it did suggest to some minds a possible slowing down or cooling off of the economy, and had a sobering effect on excessive optimism.

Thus second quarter business, in New England as in the Nation at large, was characterized by the interplay of three factors. There was continuation of an unmatched prosperity overall. There was continuation of intense demands, arising mostly from the business and governmental sectors, against available productive resources with consequent inflationary pressures. Finally, there emerged some symptoms of easing activity, largely arising from the consumer sector and thus far of limited impact. Could appropriate restraints on those inflationary pressures meet the economy's needs, maintain prosperity, yet not develop into a downward phase of the business cycle? It was a time for testing. The following analysis of New England's second quarter performance encourages confidence that the test is being met.

Manpower needs afforded further **employment** growth but at a slackened rate and with somewhat less impact on unemployment rolls. New England's nonagricultural employment, with allowance for seasonal factors, continued to expand through June. But the growth over figures for a year earlier which had reached 4.8 percent in January and February was narrowed month by month to 3.5 percent by June.

Consistent with the customary influence of springtime in New England, by far the greater part of its second quarter job expansion was in nonmanufacturing activities, especially in construction, trade and the services. Measured from a year ago, however, June's 2.7 percent

net gain in nonmanufacturing jobs was well surpassed by that of 4.9 percent in manufacturing. The latter growth rate, and particularly the 7.3 percent rate in its durable goods producing component, reflected the continuing impact on New England of the Nation's record-breaking economic advance and its emphasis on demands for defense and capital goods. In June all of New England's durable goods producing industries had employment gains over a year ago — exceeding 10 percent in electrical machinery, instruments and ordnance. Nondurable goods producing industries averaged a more modest 2.1 percent gain over the period.

Employment gains continued to be a common experience for states and metropolitan areas throughout the region, but with expected variations in degree. As of June the best 12-month percentage gains were 7.0 for Vermont, 5.7 for New Hampshire and 4.4 for Connecticut.

Unemployment in New England remained relatively low as manpower needs opened more and more jobs to willing workers. However, unemployment expressed as a percentage of the labor force and seasonally adjusted rose each month during the quarter from its low rate of 3.5 percent in March to 4.2 percent in June. This June rate slightly surpassed the national average of 4.0 percent and encompassed a regional range from 5.9 percent in Maine down to 1.7 percent in New Hampshire.

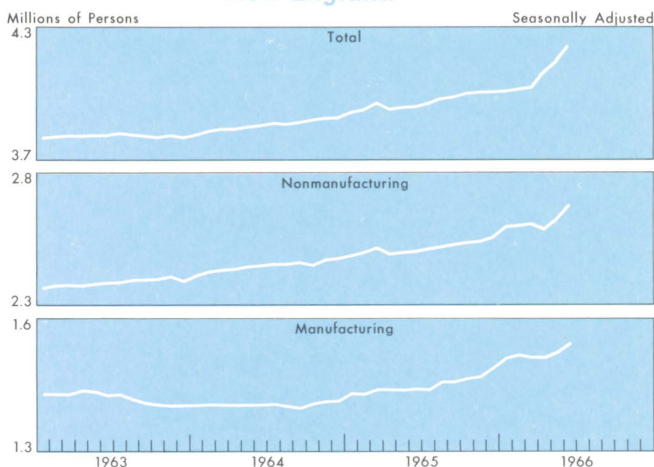
Lengths of workweeks for manufacturing production workers also indicated the strong demand for labor. The seasonally adjusted average of 41.7 hours in June continued appreciably longer than that of 41.4 hours a year earlier.

ably longer than that of 41.4 hours a year earlier.

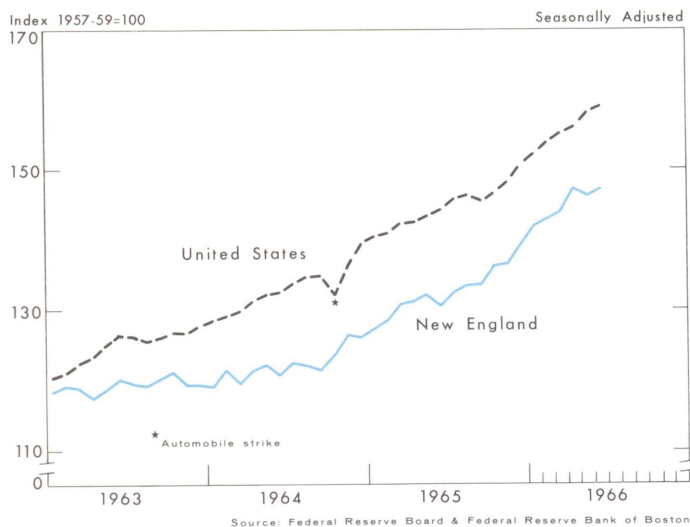
An index of manufacturing production in New England is computed by this Bank from trends in numbers and workweeks of these factory employees. It is not surprising to find this index rising further in the second quarter. Its record seasonally adjusted value of 146.9 in June, referred to a base of 100 for 1957–59, indicates an average rise of nearly 12 percent over the preceding 12 months. Monthly surveys of the New England Purchasing Agents Association during the second quarter noted production increases at 52, 45 and 35 percent, successively, of its reporting firms. Although this might suggest waning vigor as the quarter progressed, it is also to be noted that in no month of the quarter did more than 6 percent report declining trends in production.

Manufacturers' orders and sales strongly influence their production schedules. The new order experience for the New England Purchasing Agents Association during the second

NONAGRICULTURAL EMPLOYMENT New England



PRODUCTION INDEXES Total Manufacturing



quarter closely paralleled its production experience, with 49, 40 and 34 percent reporting increasing flows of new orders during successive months, and a maximum of only 14 percent reporting decreasing flows. A sample survey made by this Bank of larger New England manufacturers' sales experience found that on a seasonally adjusted basis their sales slipped by 1.3 percent from the first to the second quarter. But that decline loses significance when considered in conjunction with a vigorous increase of 8.6 percent from the fourth quarter of 1965 to the first quarter of this year.

Investment in new construction contributed substantially to continuing vigor in the regional economy. The impressive 40 percent increase which F. W. Dodge Company had reported in New England's total contract awards for the first quarter of 1966 over those for the corresponding 1965 period was topped by relative increases of 50 percent for April

and 48 percent for June. The May total failed by 5.5 percent to match that of a year earlier only because of chance inclusion of an unusually large contract in the May 1965 total. Combined, the second quarter contracts totaled 27 percent above those for a year ago — a much better performance than the 5.9 percent increase which was achieved nationally.

Again in the second quarter, non-residential building was chiefly responsible for the surge in the region's flow of new contracts. Second quarter awards in this overall category totaled 59 percent more than in the corresponding period of last year. In this same time manufacturing build-

ing contracts were showing implementation of burgeoning capital expenditure programs by nearly tripling. Commercial building contracts and those for educational and science buildings were up by nearly a half.

Even residential contracts continued to be awarded in good volume in New England, the second quarter total exceeding that of a year ago by 14 percent. This was in striking contrast to the national experience where there was a relative decline of 6.5 percent. Despite a nationwide tightening in the market, mortgage funds were still in comparatively better supply in New England than in most regions. Also there was less evidence of earlier overbuilding in New England than elsewhere.

Personal income to New Englanders continued to expand with growing employment, more activity and generally higher wages and salaries. New England's per capita income has regularly surpassed the national average al-

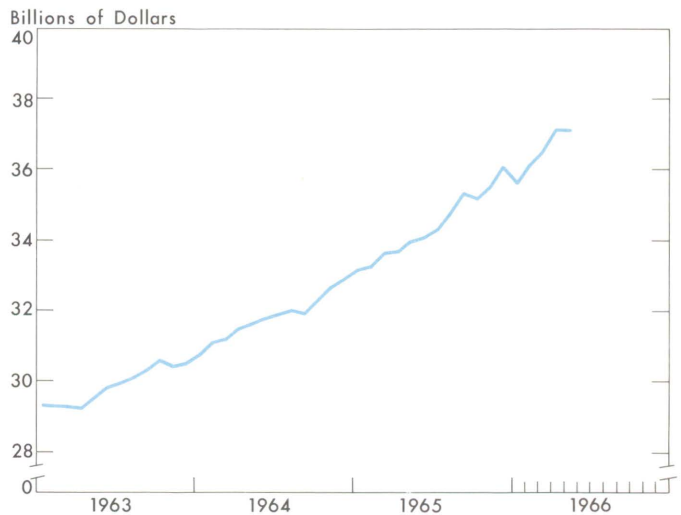
though its rate of growth in total personal income has lagged in some recent years. This lag, however, seems to have been corrected in 1966. Estimates by *Business Week* indicate that in May New Englanders' total personal income was growing at an annual rate of 9.2 percent. Their total for the first 5 months of 1966 was 8.8 percent greater than a year earlier and only in Maine and Massachusetts were the rates of increase less than the national average of 8.0 percent.

An increase in consumers' spending is to be expected from an increase in consumers' incomes, but the fragmentary availability of regional retail sales data makes detailed analysis rather difficult. However, some easing in the second quarter is indicated from the unusually free spending splurge of the first quarter. The U. S. Bureau of the Census estimates that New England's total retail sales in April and May, without any adjustment for seasonal or trading day factors, were in 6 percent greater dollar volume than in the same months of 1965. This was somewhat less than the 11 percent increase between first quarter totals for the 2 years.

An index of seasonally adjusted sales at a regularly reporting sample of department stores in the region — which of course is only one segment of total retail sales — shows a sharp drop from March to April, followed by gradual recovery during May and June. In the latter month sales at this group of stores were running about 5 percent higher than a year earlier.

The real weakness in second quarter retail sales trends was provided by a nationwide eas-

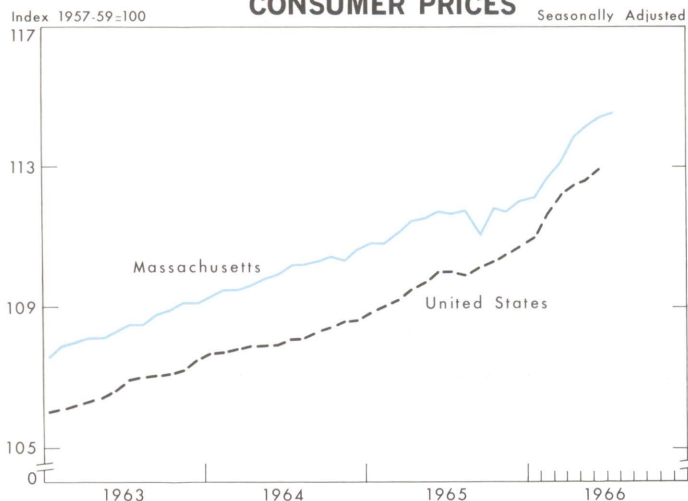
PERSONAL INCOME New England



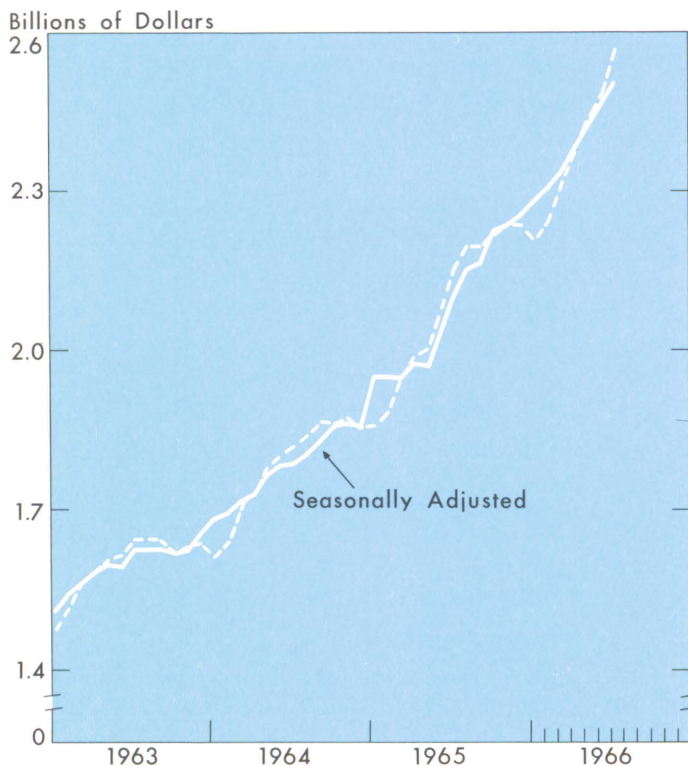
ing in the demand for new automobiles. In New England this weakness was accentuated by the initiation in April of a 3 percent Massachusetts retail sales tax. Anticipation of this change had boosted March registration of new cars in Massachusetts by 95 percent over the comparable 1965 figure, and had effected a 55 percent relative rise in the six-state region. That much of this surge in March was borrowed from later months was demonstrated when April 1966 registrations fell behind those of April 1965 by 59 percent in Massachusetts and by 20 percent in the whole New England region. Year-to-year declines continued in May by margins of 28 and 19 percent, respectively and in June by 45 and 11 percent, respectively.

Because of intensifying upward pressures on prices of commodities, services and money, however, the primary anxiety concerned itself with fear of inflation rather than deflation.

CONSUMER PRICES



COMMERCIAL AND INDUSTRIAL LOANS
District 1



By June the U. S. index of wholesale commodity prices was up 2.8 percent over a year earlier, while the U. S. consumer price index was up 2.5 percent. In each case, most of this 12-month rise occurred in 1966. The comparable rise in the Massachusetts retail price index amounted to 2.2 percent.

Monetary and banking developments during the second quarter, in New England as throughout the Nation, featured intensification in the already strong demand for credit and a substantial though not fully accommodating expansion in its available supply. In the environment of this excess demand and the competitive search of banks and other lenders for loanable funds, interest rates of nearly all types were forced further upward.

Weekly reporting member banks of the First Federal Reserve District expanded their outstanding loans, net of reserves, by 4.7 percent during the 13 weeks from March 30 to June 29 of this year. While this did not measure up to the 5.8 percent expansion which occurred during the similar 1965 period, it did nevertheless mean an impressive annual growth of 14 percent to the middle of this year. Commercial and industrial loans at these banks grew faster in the 1966 period and at midyear were nearly 20 percent greater than a year ago. Real estate, consumer, and other types of loans expanded substantially to meet borrowers' demands.

Banks were hard pressed to find funds for such loan expansion. They further reduced their holdings of Government securities. They supplemented their increasing reserves by larger borrowings from the Federal Reserve Bank. They vigorously sought to attract idle funds through certificates of time deposits and similar media bearing higher interest rates. Other lending institutions had to share with commercial banks in this tightening market of lendable funds.

Interest rates, of too many types to itemize, inevitably experienced severe upward pressure. Rates for prime business loans which a year ago were at $4\frac{1}{2}$ percent rose to $5\frac{3}{4}$ percent. Rates on conventional mortgage loans commonly rose by about $\frac{1}{2}$ percent during the quarter. Rates paid on savings and other time deposits were more frequently pressing on regulatory ceilings.

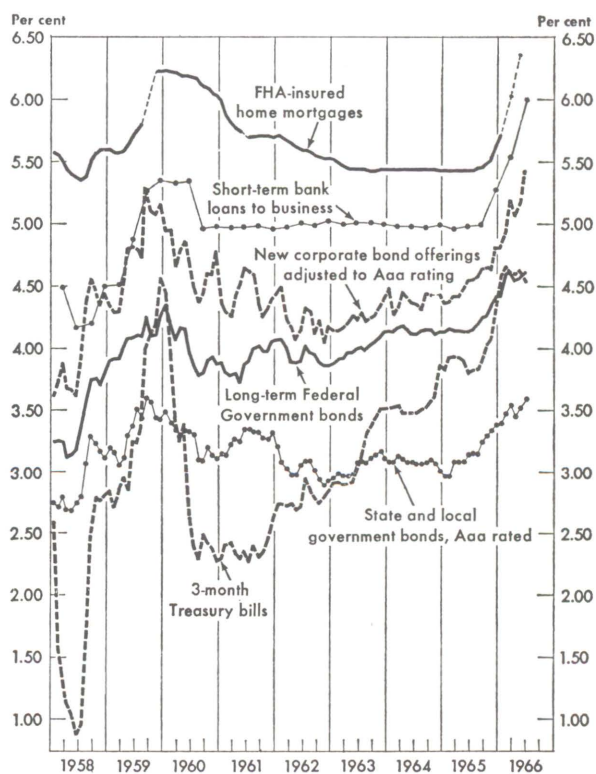
Manufacturing industries struggling to fill mounting backlogs of orders contributed considerably to the overall development of heightening activity and tightening credit. A rapid scan discloses that practically all New England manufacturing industries, particularly those producing goods needed for military and capital expansion programs, were hard pressed to meet orders.

Measured by employment changes from a year ago, the region's growth leaders were its **electrical machinery** and **ordnance** industries.

The former accounted for 21,700

of the 71,500 increase in manufacturing employment from June 1965 to June 1966. The latter, although a minor regional industry, led all others with its 18 percent growth over that 12-month period. Both coupled recovery from effects of severe defense contract cutbacks of a few years ago with the new urgencies imposed by escalation of the Vietnam military effort.

THE STRUCTURE OF INTEREST RATES IN THE UNITED STATES



NOTE: Mortgage yields are plotted through May; all other series through June.

Producers of **nonelectrical machinery**, New England's largest manufacturing industry, supplied much vigor to the second quarter's rise in activity. Makers of machine tools and textile machinery were notably beset by the flood of new orders. Rising employment in the industry was limited by a lack of skilled workers.

Very busy operations prevailed generally in the region's other metal-based industries. In the **primary and fabricated metals** industries, June employment was 5.9 percent higher than a year ago, average workweeks continued relatively long, and copper remained in short and costly supply. In the **transportation equipment** industry, large orders for aircraft equipment supported busy production schedules, and June employment in spite of some contraction from May was 7.3 percent above that of a year ago. Expansion in the **instruments** industry was even greater, involving a robust 10 percent growth in employment to June from a year ago and a substantial amount of overtime in workweeks.

Continuing high levels of production and sales benefited New England's **furniture** manufacturers but they had yet to solve the problem of an adequate supply of skilled labor. **Lumber and wood products** firms continued to operate at high capacity despite a tight labor supply, and were as yet not seriously affected by declining trends in residential construction.

New England's nondurable goods industries, oriented more to the demands of consumer markets, participated more modestly in the second quarter's advance than did the durable goods industries, and as usual achieved practically all of their quarter's advance in June.

The **shoe and leather** industry continued

to be the largest employer among New England's nondurable goods producers, but its growth in both employment and production was retarded by difficulties in finding enough new trainees. Federal hide export controls had checked at least temporarily the soaring costs of hides, but the problem remained critical. Employment and average weekly hours continued to expand at the region's **textile mills**, under the impetus of strong demand and good sales volume which apparently deferred at least one contemplated mill closing. With an erratic trend of **apparel** sales in early spring followed by new strength in June, producers' orders picked up sufficiently to accentuate existing shortages of labor and inventories.

The excellent business which producers of high quality **jewelry** have been enjoying extended during the quarter to include some operations of costume jewelry producers, and the major problems were those of finding the needed workers and sufficient supplies of copper and copper-based metals. In the **pulp and paper** industry, production, sales, employment and prices remained relatively stable at high levels during the second quarter. With operations generally running very close to mill capacities, extensive programs for new plant and equipment are still on schedule.

Employment in New England's **printing and publishing** industry recovered substantially in April with the termination of the strike against Boston newspapers. In the manufacture of **food, chemical, rubber and plastic products** New England employment at midyear showed advances both within the quarter and from a year earlier, but the degree change varied considerably between individual segments and companies within those industries.

Here's New England –

MANUFACTURING INDEXES (seasonally adjusted) 1957-59 = 100	NEW ENGLAND			UNITED STATES		
	pJune '66	May '66	June '65	June '66	May '66	June '65
All Manufacturing	149	147	131	158	158	144
Nonelectrical Machinery	164	167	145	180	178	159
Electrical Machinery	172	167	141	186	184	158
Transportation Equipment	175	185	161	167	166	150
<i>Textiles, Apparel, Leather</i>	118	116	105	142	140	134
Textiles	118	116	106	144	142	132
Apparel	115	114	112	151	148	145
Leather	113	112	98	113	112	105
Paper	138	134	124	154	153	139
	Percent Change From:			Percent Change From:		
BANKING AND CREDIT	June '66	May '66	June '65	June '66	May '66	June '65
Commercial and Industrial Loans (\$ millions) (Weekly Reporting Member Banks)	2,490	+ 2	+20	53,311	+3	+19
Deposits (\$ millions) (Weekly Reporting Member Banks)	6,590	+ 1	+ 9	165,254	+1	+ 6
Check Payments (\$ millions) (Selected Metropolitan Areas)*	222.7	0	+12	3,377.1	+1	+12
Consumer Installment Credit Outstanding (index, seas. adj. 1957-59 = 100)	171.8	+ 1	+ 9	210.4	+1	+12
DEPARTMENT STORE SALES (index, seas. adj. 1957-59 = 100)	134	+ 6	+ 6	n.a.	n.a.	n.a.
EMPLOYMENT, PRICES, MAN-HOURS & EARNINGS						
Nonagricultural Employment (thousands)	4,213	+ 2	+ 4	64,078	+2	+ 5
Insured Unemployment (thousands) (excl. R.R. and temporary programs)	61	- 8	-26	814	-8	-25
Consumer Prices (index, 1957-59 = 100)	114 (Mass.)	0	+ 2	113	0	+ 2
Production-Worker Man-Hours (index, 1957-59 = 100)	108	+ 1	+ 8	118	+1	+ 7
Weekly Earnings in Manufacturing (\$) (Mass.)	104.81 (Mass.)	0	+ 6	112.74	0	+ 5
OTHER INDICATORS						
<i>Total Construction Contract Awards** (\$ thous.)</i>	304,528	0	+27	5,027,661	+1	+ 6
Residential	119,455	+ 3	+12	1,959,810	-3	- 7
Nonresidential	128,184	+ 3	+59	1,864,877	+3	+15
Public Works and Utilities	56,889	-12	+ 8	1,202,974	+4	+17
Electrical Energy Production (4 weeks ending June 18, 1966) (index, seas. adj. 1957-59 = 100)	165	- 1	+ 7	176	+1	+ 9
Business Failures (number)	56	- 5	+133	1,077	+8	- 2
New Business Incorporations (number)	1,047	+ 8	+ 2	17,500	+3	- 1
*Seasonally adjusted annual rate.						
**3-mos. moving averages — Apr., May, June.						
	p = preliminary			n.a. = not available		

