

# *The Downturn in the New England Economy: What Lies Behind It?*

**A**fter a long period of vigorous growth—a period in which New England grew faster than the rest of the United States—employment in New England leveled off in 1989. This slowdown represents both a cyclical adjustment and a disturbing erosion in New England's competitive position.

To help clarify the causes of the downturn and the implications for the region's future development, this article develops a framework for analyzing regional economies, applies that framework to New England and other regions of interest, and examines New England's share of national markets in key industries.

## *New England's Economic Performance*

A quick overview of New England's performance in recent years is provided by Chart 1, which shows New England employment in major sectors of the economy as shares of national totals. Back in the early 1970s, hardly anyone would have predicted that New England, with its cold winters, high energy costs, high taxes, and location far from Sunbelt markets would have grown as quickly as the rest of the country. Perhaps the most interesting finding in Chart 1, then, is that New England employment has stayed at approximately 6 percent of the U.S. total since 1973. Indeed, our share rose steadily from 1976 to 1987 before it reversed itself and fell in 1989.<sup>1</sup>

The central role of the region's durable goods manufacturing firms is underscored in the chart. Employment in this area rose from under 7.5 percent of the national total in 1973 to a peak of close to 9.0 percent in 1983; it has since fallen below 8.0 percent. This decline bodes ill for the long-term economic outlook and should be the single most important issue on New England's economic agenda.

It is not surprising that New England's nondurable goods sector,

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which includes such traditional industries as shoes, textiles, and apparel, should represent a declining share of national employment. Even so, this sector followed a pattern somewhat similar to durables, with only a modest decline in the golden years from 1975 to 1984 and sharp losses thereafter.

Another important factor in New England's strong performance during most of the 1980s was the remarkable upsurge in the region's construction industry; employment rose from 4.6 percent of the national total in 1979 to a peak of 6.7 percent in 1988. Employment in finance, insurance and real estate also rose in relation to the national industry.

Even during the boom years of the 1980s, New England's rate of population growth was barely half that of the nation. With this low population gain, New England cannot support a large home-building sector, and its construction industry must in the long run form a smaller proportion of the regional economy than is true elsewhere. The high construction activity of recent years was clearly unsustainable; in retrospect, everyone should have seen the current slowdown coming.

The problems in manufacturing would ordinarily have led to a slowdown sometime after 1984. They were masked, however, by the gains in construction and related industries. When, in 1989, construction fell, total employment leveled off, New England's economic performance fell behind the rest of the country's, and the problems became apparent.

The subsequent analysis is centered on the key durable goods manufacturing industries and focuses on three periods:

- 1) 1975-80: In 1975 the New England and United States economies began a long period of expansion. Durable goods manufacturing employment grew even more rapidly in New England than the nation during this period, peaking in 1980.
- 2) 1980-84: New England durables employment recovered quickly from the 1982 recession; by 1984 it had essentially regained 1980 employment levels. During this period national durable goods employment fell sharply, so New England continued to gain share.
- 3) 1984-88:<sup>2</sup> From 1984 onward, New England's durable goods manufacturing employment fell by roughly 130,000 jobs, while national employment rose. The decline is a central focus of this article. Which industries within the region suffered the greatest losses? Which other regions of the country picked up the employment share lost here?

## *A Framework for Analyzing the New England Economy*

This review of New England's recent economic performance is grounded in economic base theory and the central role of those industries that sell to customers outside the region.<sup>3</sup>

### *Economic Base Theory*

It is helpful to think of the economy of a region as containing three sectors: the economic base, the domestic sector, and construction. The economic base consists of those activities that sell primarily to customers outside the region. In New England, the economic base includes almost all of the region's manufacturing, its insurance headquarters, its farms and fisheries, and its private schools, colleges and universities. These base industries can be identified with readily available economic data.

New England's base also includes hotels and restaurants that cater to nonresident tourists, wholesalers that supply stores outside the region, banks that lend to national customers, and software houses or business consultants selling in national markets. Unfortunately, these are not readily separated from banks serving retail markets or restaurants catering to neighborhood trade. For the purposes of this article, these hard-to-categorize sectors are referred to as the "semi-base."<sup>4</sup>

The domestic sector is composed of the businesses that serve primarily local markets—retail

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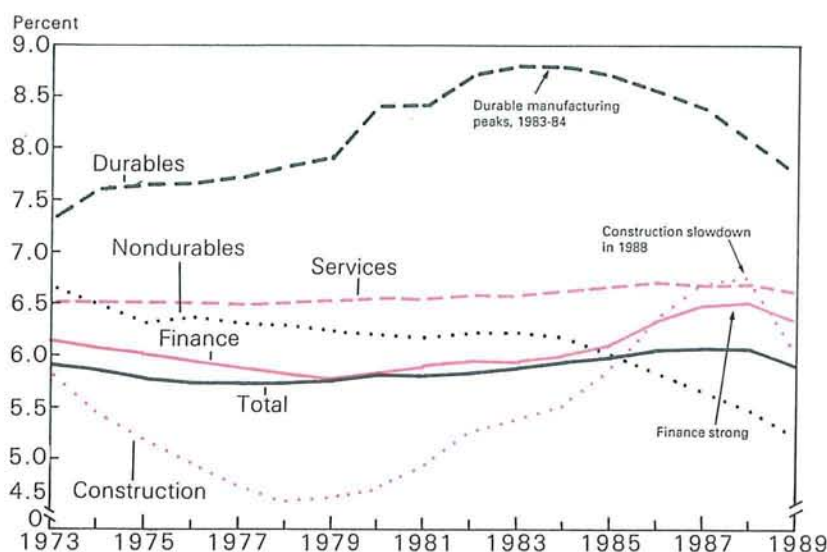
*As long as New Englanders spend a substantial portion of their income on goods produced outside the region, they must be successful in sales in national and world markets.*

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stores, insurance agents, barbershops, laundries, lawyers, and local government.<sup>5</sup> The growth of the domestic sector is driven by the economic base. New shopping centers and real estate agencies normally cannot be justified without higher total income in the region. Higher income is earned from increased sales

Chart 1

*New England Employment as a Percentage of U.S. Employment by Major Industry Groupings*



Source: See Table 1.

to out-of-region buyers. As long as New England residents spend a substantial portion of their income on food, automobiles, appliances, fuels, and clothing produced outside the region, they cannot expect to increase regional income and employment unless they are successful in national and world markets.

Construction is usually classified with the domestic sector. However, construction activity is financed in national capital markets and in a period of falling interest rates and looser credit, a region could experience a construction boom even if local income were not growing strongly. Conversely, high rates might trigger a decline even if the regional economy were sound. The investment decisions of federal, state and local governments or major companies in the region can also affect the level of construction apart from local economic conditions. For short-run analysis, then, the construction sector does not depend on the level of the local economy and can be grouped with the economic base. From one year to the next, total employment in a region depends on increases in construction and/or base sector activity and on the multiplier impact of these increases on total employment.

Over the longer run, of course, construction employment depends heavily on the health of the local economy and on long-term population growth. However favorable financing conditions might be,

builders will not continue to put up houses that will not sell and office space that cannot be rented. For long-term analysis, the construction sector is not part of the economic base.

This distinction is critical to understanding the recent economic history of New England—a period in which the construction sector has grown out of proportion to the economic base. The inevitable end of a construction boom is one of the major factors behind New England's current downturn.

Regional economic studies frequently underestimate the impact of the construction cycle on regional economies because they ignore the service-producing industries that are closely linked to construction. This article tries to rectify the problem, by defining the construction sector to include not only the carpenters, electricians, and ironworkers directly employed in construction, but also real estate agents and people employed in selling furniture and building materials.

The relationship between a region's economic base and its total economy is commonly termed the multiplier. The income generated by new base sector jobs supports new retail stores, insurance agencies, laundries, and schoolteachers. The size of this multiplier depends on the ability of the region to meet its own demand for goods and services. In the long run, then, the study of a regional economy is essentially the study of the health of its economic base.

### *The Economic Base*

Over a period of a few months, movements in a region's base will generally follow national cycles in those same industries. When computers, metalworking, insurance, and electronics slow nationally, growth in the New England components of those industries slows. For short-term forecasting, then, it is important to monitor national trends in a region's key industries.

Over the course of several years, however, regions can gain or lose share; employment, therefore, depends not only on national trends but also on the

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*Regional employment depends not only on national trends but also on the region's competitive position.*

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region's competitive position. Market share is a far more interesting issue for regional analysis than national production and employment trends. A region can do relatively little to influence the size of the national market. But, given a long enough time horizon, it can increase—or decrease—the share of national production that takes place within its boundaries.

Region-to-region differences in energy and transportation costs, wages, taxes, health insurance, and workers' compensation influence the decisions of businesses to relocate or expand production facilities. Other factors also come into play: Where do business people like to live? Where can they easily recruit either assembly-line labor or skilled engineers and researchers? Where will they find government officials who will be helpful and cooperative on such matters as curb cuts, building permits, and environmental regulations? Where can they have ready access to current research results?

A region's share of national production and employment also depends on the success of the particular products and the business strategies of its companies. New England's share of the camera market, for example, depends on Polaroid's success in competing with Kodak. New England's share of the computer market rose in the 1970s when the minicomputers made by

Digital, Data General, Wang, and Prime were taking market share from IBM's mainframes. New England's share of the computer market is falling today as personal computers displace the minis.

Over the very long run, the ability to develop new products and industries is critically important to a region like New England. As industries mature and their products standardize, production will gradually shift to suppliers in lower-cost regions and, increasingly, overseas. The region's textile and shoe industries have been in decline for over a generation, but the growth of computers, instruments, and other high tech manufactures in the late 1970s and early 1980s enabled the region to achieve remarkable prosperity. With the slump in computers and the inevitable defense cutbacks, New England may once again have to generate a new round of products or even new industries if it is to continue to prosper.

Chart 2 shows base, construction,<sup>6</sup> semi-base, and domestic employment in New England. A listing of the industries assigned to each category is found in the Appendix. Other analysts may differ somewhat on the assignment of particular industries, but the overall picture is unlikely to change very much. In 1975, the base represented 30 percent of total employment; the base plus the construction sector—the foundation for the short-term multiplier—accounted for 37 percent. By 1988, the base had fallen to 23 percent of total employment; construction had risen to 10 percent from 7 percent in 1975. The region's increased dependence on the semi-base industries is also illustrated in Chart 2. Over the entire period, the combination of base, semi-base and construction remained essentially the same fraction of employment, with a decreasing fraction of base jobs replaced by semi-base and, after 1980, by construction.

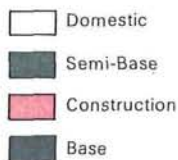
### *Regional Growth Patterns*

This framework will now be used to analyze economic developments in New England. As shown in Chart 3, 1975–80 was a period of strong, balanced growth. Total and base employment grew at 3 percent per year, with the semi-base growing more quickly and construction and domestic employment somewhat more slowly.

From 1980 to 1984, a curious pattern developed: base employment began to fall while construction growth doubled to almost 6 percent a year. The imbalance worsened after 1984. Base employment was now falling more than 1 percent a year, while

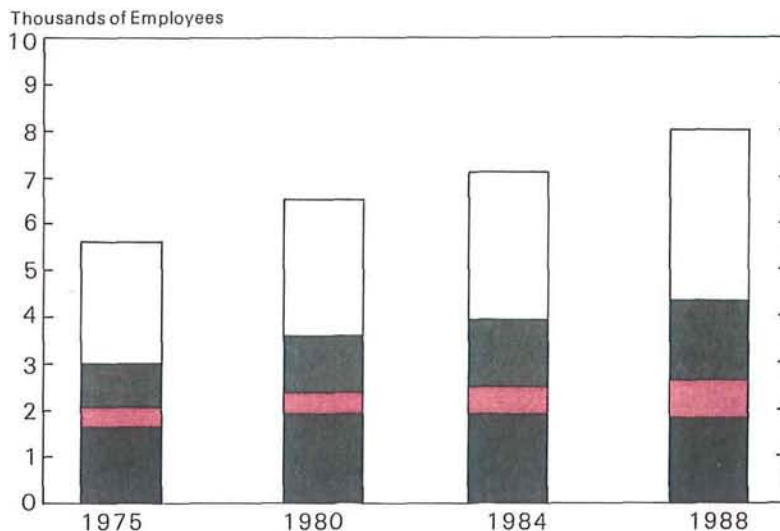
Chart 2

*New England Employment, by Sector*



Note: See the Appendix for a listing of industries in each sector.

Source: See Table 1.



construction growth exceeded 8 percent a year. Domestic employment outgrew the economy as a whole. Each of the six New England states followed essentially the same growth pattern—rapid growth in the late 1970s, slower growth in the early 1980s as the economic base slowed down, and construction-led employment gains after 1984.

The extent to which New England's economy was out of balance is underscored by Chart 4, which shows the differences between New England and national growth rates. In the most recent time period, New England's construction sector was growing 5 percentage points faster than U.S. construction while its base sector was shrinking a percentage point

Chart 3

*Annual Growth Rates, New England Employment*

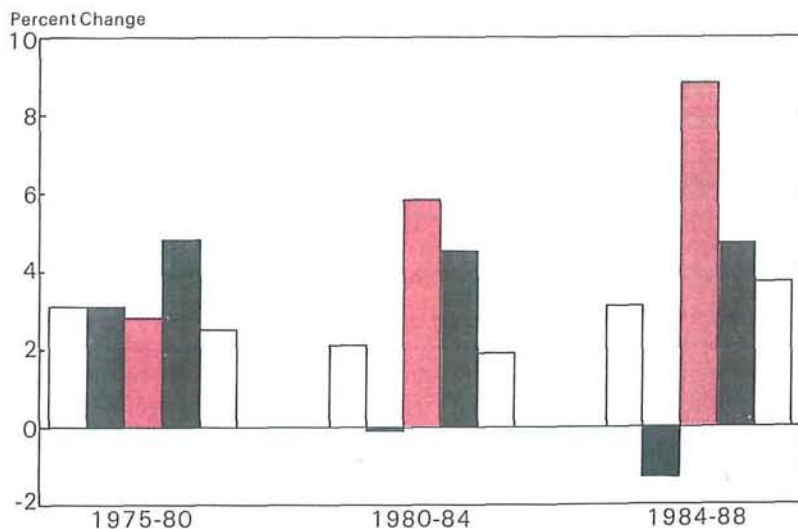
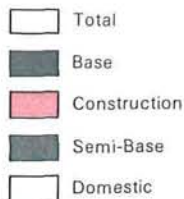
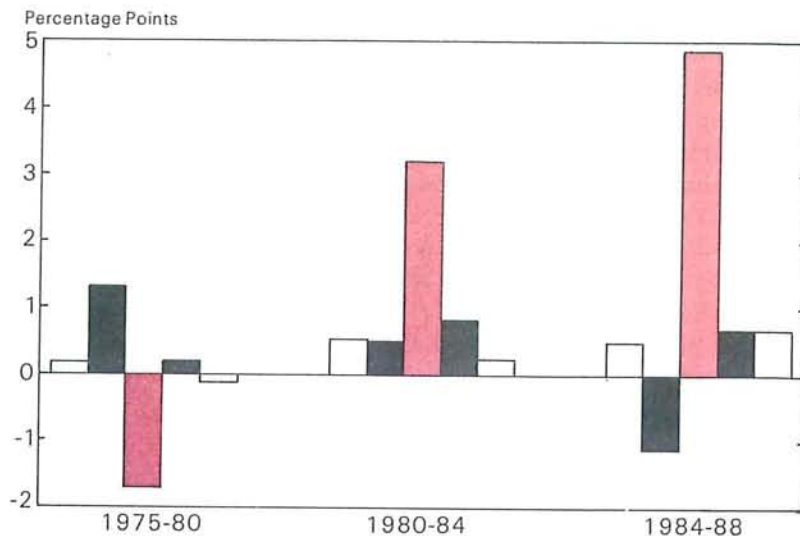


Chart 4

*Difference between Growth Rates of U.S. and N.E. Employment*



Source: See Table 1.

more. As the experience of recent months makes clear, builders will not continue to construct new units nor will bankers continue to finance them in the absence of adequate demand. Given the long slide in New England's economic base, the current decline in construction was inevitable.

It is tempting to hope that New England has become a "service economy," in which growth is led by a constantly expanding service sector and the economic base is no longer important. A glance at the experience of the Pacific and West South Central regions (Charts 5 and 6) suggests otherwise.<sup>7</sup> In the Pacific in the early 1980s and more strikingly in the West South Central region in the mid 1980s, a weakening in base employment was accompanied by a sharp reduction in the growth of domestic-sector and construction employment. These examples emphasize that strong growth in the service-producing industries of the domestic sector cannot continue in the face of a declining base. New England has been remarkable in that it sustained such strong construction and domestic activity for so long.

The continued high growth of New England's semi-base sector raises an interesting and important question. To the extent that this growth is serving national markets, it may well continue and would represent the only real strength in the short-term outlook for New England. On the other hand, if this

new employment serves domestic markets, the semi-base (like construction) may have expanded beyond the capacity of the local market to support it and may well require a correction.

*Shift-Share Analysis of the Economic Base*

As can be seen from Chart 7, durable goods manufacturing represents approximately half of New England's base; it looms so large that its ups and downs dominate the movements of the total. Nondurables manufacturing represents a steadily shrinking portion of the base. The nonmanufacturing components of the base have grown just about as much as nondurable employment has shrunk. This growth has come mainly from education and to a lesser extent from insurance. The "other" category includes mining, farming, forestry, and fishing.

Traditional nondurables manufacturing (shoes, textiles, apparel) will probably continue its long decline. Meanwhile, the diminished number of college-age students probably means a temporary end to growth in higher education. Defense cutbacks assure a decline in military employment. Insurance, therefore, represents the only likely source of base sector growth other than durables, and by itself insurance is too small to have much impact. One is forced to

## Employment Growth Rates

Chart 5 Pacific States  
(California, Oregon, Washington, Hawaii, Alaska)

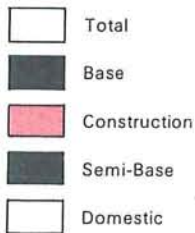
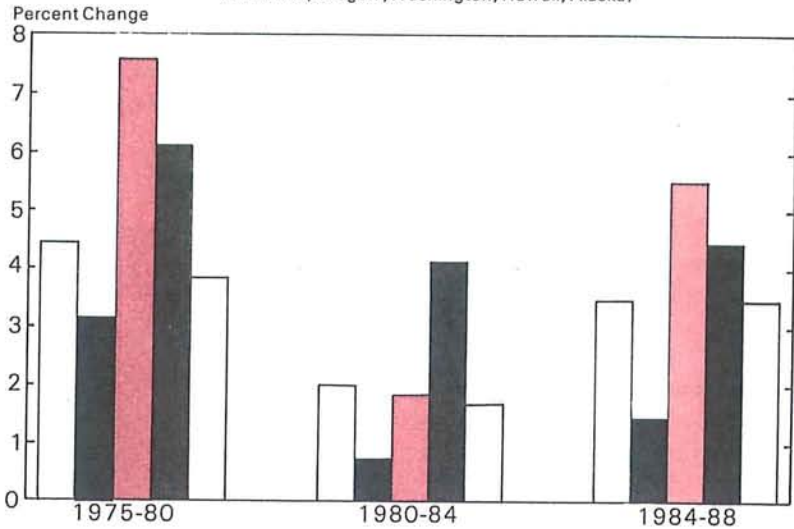
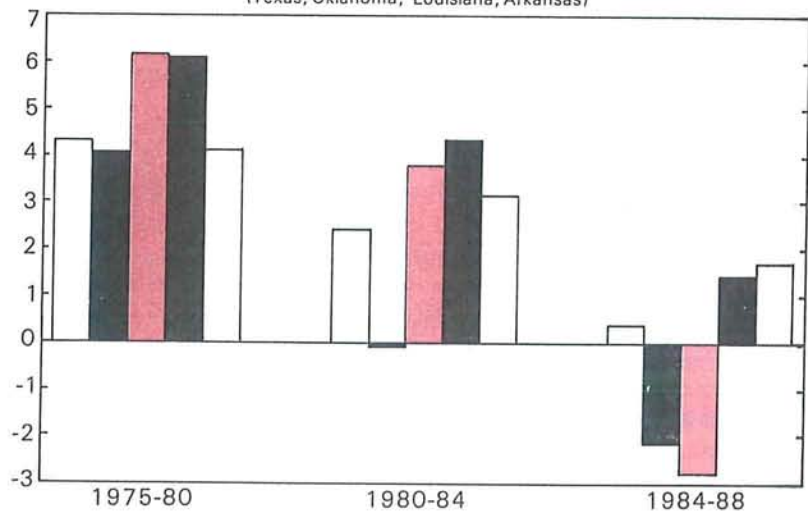


Chart 6 West South Central States  
(Texas, Oklahoma, Louisiana, Arkansas)



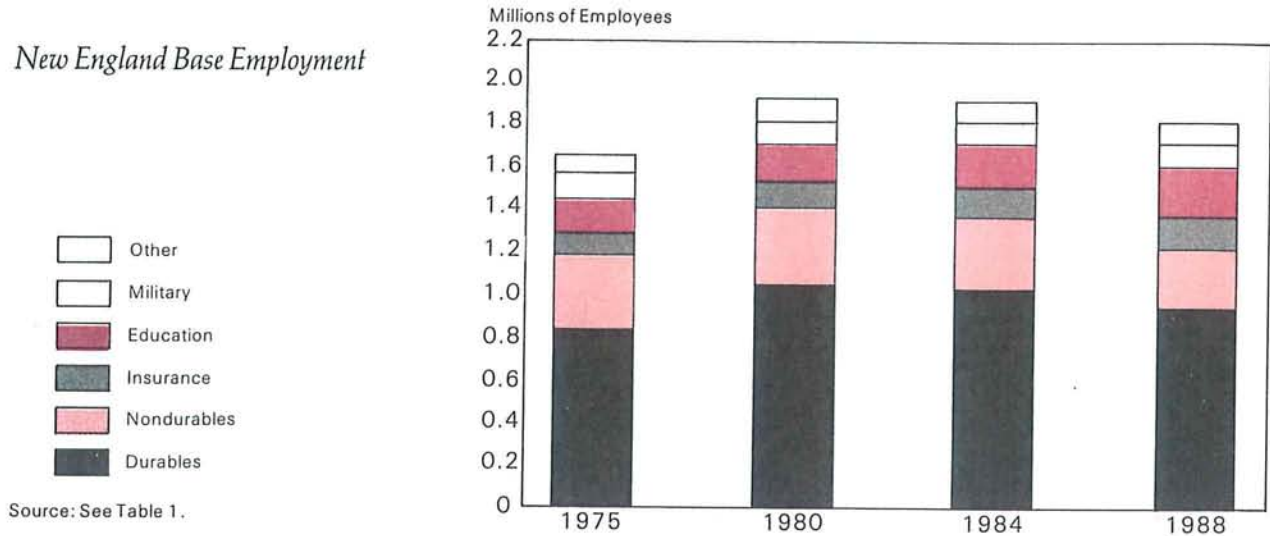
Source: See Table 1.

conclude that New England must therefore look to a revival of its existing durable goods manufacturing sector or to whole new industries (such as bio-tech or advanced plastics) if it is to have a healthy economy and sustainable growth.

New England's durable goods manufacturing sector has been losing employment since 1984. The reduction is attributable mainly to a deterioration of New England's competitive position rather than to national trends. This is demonstrated by shift-share

Chart 7

*New England Base Employment*



Source: See Table 1.

analysis, which looks at the national growth rate in each narrowly defined industry, applies this growth rate to New England's employment, and compares the estimated changes to actual employment changes in the region. For example, national employment in electrical equipment (appliances, telephone and other communications equipment, electronics and so forth) rose by 23.7 percent from 1975 to 1980. Had the New England industry grown at this same rate, 37,800 jobs would have been added in the region. This portion of New England's employment increase (its "share" gain) represents what would have occurred if the region had maintained a constant share of the U.S. industry. In fact, New England gained 54,500 jobs in electrical equipment. The additional 16,700 jobs represent a shift in employment from other regions into New England.

Shift-share analysis can help answer a critically important question—did New England's poor performance since 1984 in base industries, and in durable goods manufacturing in particular, occur because New England is overrepresented in slow growth industries? Or did it occur because, industry by industry, New England was losing ground to competitors elsewhere in the country?

*1975 to 1980*

During this period, national employment in base industries grew 9.2 percent. Had New England maintained a constant share in each of these industries (insurance, machinery, instruments, and so forth), its base employment would have grown 12 percent. That is, New England was heavily represented in high-growth industries; it had a favorable industrial mix. Its "share" employment gain would have been 199,000 jobs. In fact, New England base employment grew by 16.4 percent. The region enjoyed a "shift" of 73,000 jobs from other regions, for a total employment gain of 272,000 in its economic base. Thus, New England turned in a more favorable performance than the rest of the country both because it had a strong mix and because it gained share.

The favorable shift occurred across a broad range of base industries, as spelled out in Table 1. The base industries shown are those in which New England's employment in 1988 exceeded 50,000; they are listed in the order of their contribution to employment growth. Machinery (computers, machine tools, and industrial machinery) and electrical equipment accounted for over 110,000 new jobs, of which 40,000 appear to be a shift from other regions. A detailed



analysis of the sub-industries involved shows that New England's stronger-than-national performance occurred because the region's employment was concentrated in the rapidly growing computer and electronics sub-industries. In other words, using a finer industrial breakdown, somewhat more of New England's strong showing during this period would be attributed to its favorable mix and somewhat less to a gain in share.

Table 1  
*Shift-Share Analysis of New England's Economic Base, 1975-80*

Industry	Employment Change 1975-80 (thousands of jobs)		
	Shift	Share	Total
Machinery, except electrical	26.7	33.2	59.9
Electrical and electronic equipment	16.7	37.8	54.5
Transportation equipment (excluding motor vehicles)	3.1	22.3	25.4
Instruments and related products	1.9	21.8	23.7
Insurance carriers	.3	17.8	18.1
Fabricated metal products	3.6	13.5	17.1
Education (private)	-4.0	18.8	14.8
Farm	12.7	-1.8	10.9
Miscellaneous manufacturing	3.9	5.1	9.0
Paper	.0	4.8	4.8
Rubber and misc. plastics products	-9.5	13.0	3.5
Military employment	-4.8	-9.2	-14.0
Other	22.3	21.7	44.0
<b>Total</b>	<b>72.9</b>	<b>198.9</b>	<b>271.8</b>

Components may not sum to totals because of rounding.  
Source: Author's calculations using computer tape supplied by the U.S. Bureau of Economic Analysis

New England gained another 100,000 jobs in transportation equipment except motor vehicles (aircraft, shipbuilding, and missiles), instruments, fabricated metals, education (private universities, colleges, and schools), and insurance. New England's performance in these industries reflected favorable national trends. In two industries—education and rubber and plastics—strong national growth allowed New England to post overall employment gains even though it lost share.

During this "golden age," New England enjoyed rapid growth because it increased or maintained share during a time of strong national growth and because its employment was concentrated in high-growth industries. Except for business services, the semi-base sectors during this period grew more slowly in New England than in the rest of the country.

#### 1980 to 1984

Because the national economy weakened, New England's economic base was no longer growing in the early 1980s. New England would have lost 45,000 base sector jobs during this period, had its industries held a constant share of national employment. In addition, New England's competitive position was not quite as strong: its industries showed a favorable shift of 33,000 as compared to 73,000 in the earlier period (Table 2). This favorable shift was concentrated in electrical equipment. Positive shifts also resulted in employment increases in education and insur-

Table 2  
*Shift-Share Analysis of New England's Economic Base, 1980-84*

Industry	Employment Change 1980-84 (thousands of jobs)		
	Shift	Share	Total
Electrical and electronic equipment	27.1	10.9	38.0
Education (private)	7.1	23.1	30.2
Insurance carriers	8.2	2.0	10.2
Instruments and related products	2.1	.8	2.9
Transportation equipment (excluding motor vehicles)	10.1	-8.0	2.1
Rubber and misc. plastics products	-3.6	5.2	1.6
Military employment	-11.3	9.9	-1.5
Paper	-.7	-1.1	-1.8
Miscellaneous manufacturing	-3.4	-6.1	-9.5
Farm	-8.6	-4.3	-12.9
Machinery, except electrical	9.1	-26.0	-16.9
Fabricated metal products	-6.7	-13.6	-20.3
Other	3.6	-37.8	-34.8
<b>Total</b>	<b>33.0</b>	<b>-45.0</b>	<b>-12.0</b>

Source: See Table 1.

Table 3  
*Shift-Share Analysis of New England's  
 Economic Base, 1984-88*

Industry	Employment Change 1984-88 (thousands of jobs)		
	Shift	Share	Total
Education (private)	1.2	24.8	26.0
Insurance carriers	-2.4	20.0	17.6
Military employment	-.7	3.3	2.6
Transportation equipment (excluding motor vehicles)	-21.3	20.8	-.5
Farm	1.1	-4.7	-3.6
Paper	-4.9	1.2	-3.7
Miscellaneous manufacturing	-4.7	-.7	-5.4
Instruments and related products	-9.4	3.3	-6.1
Rubber and misc. plastics products	-13.9	4.1	-9.8
Machinery, except electrical	-1.8	-9.5	-11.3
Fabricated metal products	-15.1	-2.3	-17.4
Electric and electronic equipment	-27.9	-14.9	-42.8
Other	-28.5	-12.1	-40.6
Total	-128.0	33.4	-94.6

Source: Table 1.

ance, and a small increase in the defense-oriented transportation equipment except motor vehicles. In nonelectrical machinery, the effect of declining national employment overwhelmed a positive shift, producing an overall decline.

In the semi-base, business services, hotels, banks, and wholesale trade experienced favorable shifts. Most domestic sector industries grew at or near national rates.

#### 1984 to 1988

During this period, New England's base employment declined sharply. Had New England industries maintained share, the region would have gained 33,000 base jobs. Instead, New England lost 94,000 jobs. This implies an unfavorable shift of 128,000 jobs, almost 7 percent of base sector employment. New England's mix was slightly favorable during this period: while national base employment fell by 0.7 percent, New England's employment would have risen 1.7 percent had the region not lost market share. The erosion of New England's competitive position,

then, is even greater than a simple comparison of national and regional growth rates would suggest. Details are provided in Table 3, which shows that the only significant employment gains during this period occurred in education and insurance. Even these changes were more the result of national trends than regional competitive strength.

The declines in such traditional industries as rubber and plastics and textiles, apparel, and leather (the last three all in the "other" category) are perhaps not surprising or even alarming. But instruments, transportation equipment, electrical equipment, and computers are the core of New England's high tech economy, and the region lost share in all of them. At the sub-industry level, New England lost share in electronics, shipbuilding, missiles, aircraft, metal-working machinery, industrial machinery, forgings, screw machinery, cutlery, engineering and scientific instruments and others. The breadth and consistency of the region's loss of share is striking.

The poor performance of the region's base during the 1984-88 period was masked by the spectacular surge in the construction sector. Construction proper, real estate, and associated retail sectors showed a favorable shift of 131,000 jobs in this period—almost exactly balancing the unfavorable shift in the economic base.

In the semi-base area, New England saw major favorable shifts in wholesale trade and banking. Developments in the past year, however, suggest that some of the banking increase was based on construction lending and therefore will not be sustained. Domestic employment in the period grew far more rapidly than national employment, with the

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biggest gains in local government, utilities, and a wide range of services.

In the long run, the construction and domestic industries serve local markets and their growth depends upon the health of the economic base. How-

ever dramatic the construction decline and however large it looms in the short-term economic outlook, the central problem facing New England is not construction but the loss of share in just about every one of our key base industries.

### *Regional Competitors*

As New England lost market share in the 1984–88 period, which regions gained? Some insights are provided by a quick look at New England's four largest durable goods manufacturing industries.

#### *Fabricated Metals*

The fabricated metals industry consists of firms stamping, forging, and drawing metal into parts for automobiles, appliances, computers, and other basic products. This industry also includes manufacturers of ball bearings, cutlery, hand tools, structural metal parts, valves, and plumbing fixtures. It covers the basic metalworking firms characteristic of many older industrial cities of New England. From 1980 to 1984, the national economy grew slowly and the dollar rose, inviting a flood of imports. National employment in fabricated metals fell by 2.4 percent a year; New England employment dropped 3.7 percent. After 1984, a falling dollar helped stem imports and national employment stabilized. New England employment, however, continued to fall at a rate of 3.7 percent. The South Atlantic states gained share during this period, as did some East North Central and West North Central states. The West South Central states lost share; spillovers from the oil industry undoubtedly played a role. The Mid Atlantic states lost share but employment did not fall as quickly as in New England.

#### *Machinery, except Electrical*

Statistics on employment lump computers together with machine tools, engines, bulldozers, and industrial machinery. New England has been a major manufacturer both of traditional industrial machinery and computers. National employment in this industry grew 3.8 percent per year from 1975 to 1980 and fell in the 1980s. New England gained share through 1984 and essentially held its own from 1984 to 1988. The only regions gaining significant market share in the 1984 to 1988 period were the South Atlantic and the East South Central.

#### *Electrical Equipment*

This industry encompasses electric generating equipment, appliances, communications equipment, semiconductors and other electronic components. National employment grew through 1984, then fell. New England grew substantially faster than the rest of the country during the growth years and fell substantially faster after 1984. During this later period, employment shifted to the Pacific, Mountain, South Atlantic, West North Central and West South Central regions.

#### *Transportation Equipment except Motor Vehicles*

This industry is dominated by aircraft and shipbuilding. National employment rose in the late 1970s, fell in the early 1980s, and began to rise again in 1984. New England employment remained essentially level from 1980 onwards. Thus, the region gained share from 1980 to 1984, then lost ground. As New England lost share, the South Atlantic, West South Central, Mountain, and Pacific states gained.

Some interesting patterns emerge from these data. The South Atlantic region gained share across all four industries. The Mountain states have also done well. Contrary to what might be expected, the East North Central states have held their own in recent years. Like New England, the Mid Atlantic states are losing share, but not so dramatically. After falling behind national growth in the early 1980s, the West South Central states around Texas and the West North Central states from Kansas to Minnesota have been gaining share in at least some of the four industries. This pattern of regional winners and losers suggests that the explanation for New England's problems is more complex than the old Sunbelt-Frostbelt dichotomy that emphasized cold winters, older factories and a location far away from the growth centers of the country.

### *Conclusions*

New England's strong overall growth since 1984 has lacked a solid foundation. The momentum came from a dramatic but unsustainable surge in the construction industry. This surge masked a serious decline in the region's economic base, particularly its durable goods manufacturing industries. In 1989, this imbalance became painfully obvious. Construction

employment began to fall while the erosion in the economic base continued. The long boom came to an end, highlighting problems in the region's economic base going back at least five years.

While slower growth nationally in New England's base industries played a role in the decline, recent years have seen a major weakening in New England's competitive position. From 1984 to 1988, the region's loss of market share in base industries cost about 130,000 jobs. (Although the broad pattern is roughly similar for all of the New England states, the three northern states did not lose share at the rate of their southern neighbors.)

The regions that gained share across a range of key durables industries have been the South Atlantic and Mountain states. Over the last few years, New England has lost competitive position at a more rapid rate than any other region; the East North Central states around Chicago have actually held their own in fabricated metals and machinery.

This overview leaves unanswered the question of why New England's economic base has eroded. Although the problems of the region's computer companies have been widely publicized, the declines cut across the entire spectrum of manufacturing industries and cannot be explained by the special difficulties of one or two sectors.

High costs in the region are undoubtedly a major factor. In recent years, tight labor markets have pushed up wage rates and housing prices have skyrocketed, making it difficult to recruit professionals and managers from other parts of the country. Since most of New England's base firms compete with other national and international producers, they

cannot easily pass on these higher costs and, consequently, give priority to expansion options outside the region.

To the extent that labor and housing costs lie behind the current decline, there is reason for optimism. Labor costs in New England were substantially below the national average in the early 1970s; today they are higher. The current slowdown has led to a break in housing prices and will undoubtedly bring labor costs close in line with those in other industrial states. When New England costs are competitive once again, normal growth could resume.

Unlike wages and housing, other regional costs are not self-correcting. New initiatives will be required to meet concerns about high rates for workers' compensation, health insurance, and unemployment insurance and about balancing the costs and benefits of environmental regulatory systems. The region is pushing up against the limits of its current electric generating capacity and in some of the states, poor roads and declining quality of public education are sources of concern as well.

Some of these problems are not new. They have been the subject of debate for the last fifteen years—even during periods of rapid growth. Nonetheless, if ongoing problems such as these underlie the current decline, there is less reason for optimism, since they will not be solved by a year or two of slow growth.

The more we understand about the causes of New England's current decline—particularly those factors that turned sour since the growth years of the late 1970s and early 1980s—the greater will be our ability to develop programs that will help New England's industries regain their competitive edge.

## Appendix

*New England Base, Semi-Base,  
Construction and Domestic Employment,  
1988*

Category	Employment (thousands)
<b>Base</b>	
Farm	51.7
Forestry and fisheries	19.0
Various mining	5.7
Manufacturing	1,396.9
excluding food	-49.7
excluding printing and publishing	-118.9
Holding and other investment companies	24.5
Insurance carriers	155.8
Education (private)	231.4
Military	105.9
	<u>1,822.3</u>
<b>Semi-Base</b>	
Food	49.7
Printing and publishing	118.9
Wholesale trade	393.7
Eating and drinking places	386.5
Banking and credit agencies	170.0
Hotels and other lodging places	91.6
Business services	507.7
	<u>1,718.1</u>
<b>Construction</b>	
Construction	477.2
Retail bldg. material and gardening equip.	57.3
Retail furniture and home furn. stores	60.4
Real estate	206.3
	<u>801.2</u>
<b>Domestic</b>	
Residual	3,684.3

Source: U.S. Bureau of Economic Analysis, computer tape, June 1989.

<sup>1</sup> The employment data for this article were supplied via computer tape by the U.S. Bureau of Economic Analysis (BEA). At the time this article was written, BEA employment data were not available for 1989. Estimates for 1989 were calculated by applying the percentage changes in employment as shown by the U.S. Bureau of Labor Statistics 790 series to the 1988 BEA employment figures.

<sup>2</sup> Although Chart 1 shows employment through 1989, detailed information for the analysis which follows was available only through 1988.

<sup>3</sup> For a discussion of economic base theory, see, among others, Walter Isard, *Methods of Regional Analysis*, The M.I.T. Press, 1960, pp. 182-231.

<sup>4</sup> The semi-base is also defined here to include food processing and printing, two nondurable manufacturing industries that serve both local and out-of-region markets.

<sup>5</sup> It should be noted that some of the industries that have been included in the domestic sector do have customers outside the region. Examples include legal and health services. However, it was the author's judgment that these industries serve *primarily* customers within New England.

<sup>6</sup> In Chart 2 and throughout the rest of the article, the construction sector is expanded to include associated real estate and retail activities, as explained in the text.

<sup>7</sup> New England: CT, ME, MA, NH, RI, VT.

Mid Atlantic: NY, NJ, PA.

East North Central: IL, IN, MI, OH, WI.

West North Central: IA, KS, MN, MO, ND, NE, SD.

South Atlantic: DC, DE, FL, GA, MD, NC, SC, VA, WV.

East South Central: AL, KY, MS, TN.

West South Central: AR, LA, OK, TX.

Mountain: AZ, CO, ID, MT, NM, NV, UT, WY.

Pacific: AK, CA, HI, OR, WA.