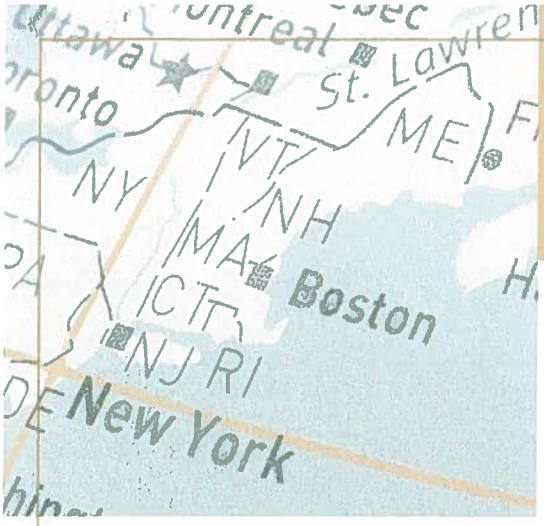
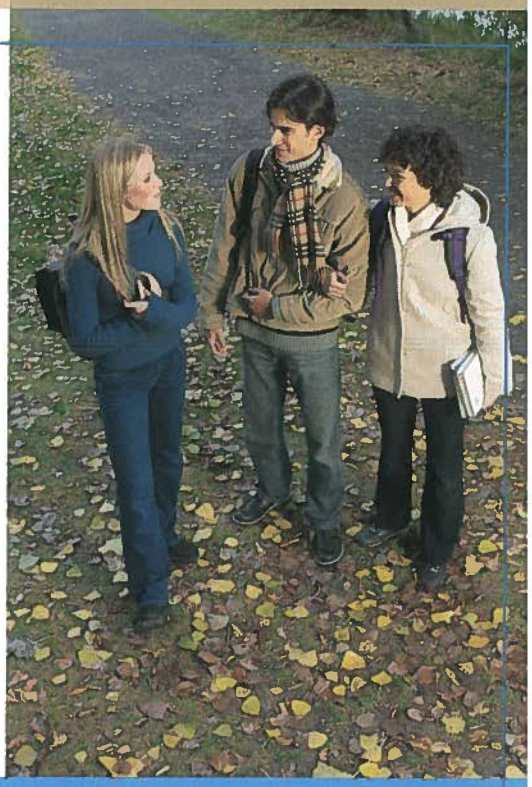
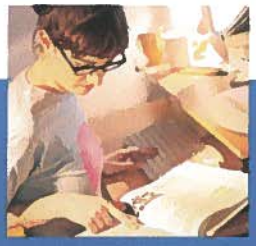
Higher Ed Matters: The Resilience of New England States on Colleges and Universities to Sustain Their Population and Workforce

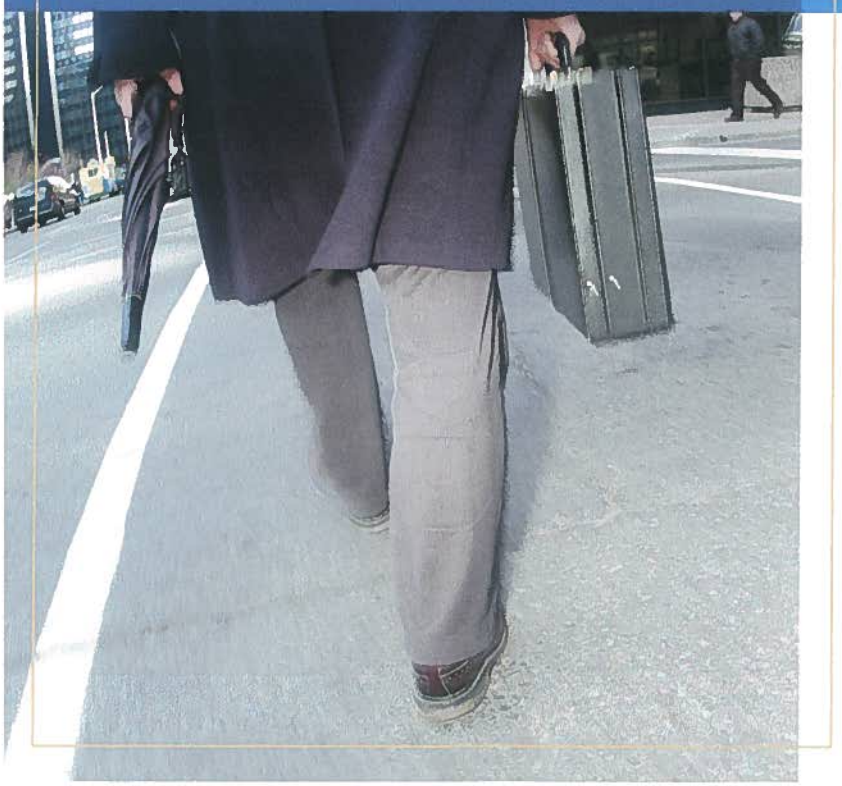




HIGHER ED MATTERS

The Reliance of New England States on Colleges and Universities To Sustain Their Population and Workforce





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Introduction

This Research Brief details one of the more interesting stories of the recent era of demographic change in New England: The often unheralded but central role that local colleges and universities play in bringing young people to the region to provide a steady supply of young workers who, in turn, are crucial in sustaining the regional economy.

As the title suggests, we aim to show that the health of New England's higher education infrastructure matters a great deal for the region's future prosperity. This is true not simply for the often cited reasons of innovation, new technologies, and sizable research funding that higher education institutions contribute, but because young people arriving in pursuit of college degrees have become arguably the single remaining bright spot in an otherwise bleak outlook for attracting fresh entrants into our local labor markets from elsewhere.

It is not an understatement to suggest that our future does indeed hinge on the willingness of thousands of young people from across the nation to launch their educations, their graduate studies, and, often, their careers here in New England. The story is a complex one but its essential parts are straightforward:

The central role of... higher education institutions as "future worker atractors" becomes obvious.

- First, we show that the region has grown much more slowly than the nation as a whole, and that the slow growth is the result of low levels of net in-migration.

- Second, we show that much of the existing migration into the New England region can be traced to a sizable influx of young people and that this type of migration has the capacity to bring students into the region for varying periods of time depending on the state.

In documenting the nature, duration, and size of this in-migration, the central role of high-quality public and private higher education institutions as "future worker attractors" becomes obvious. We conclude that, to the extent these vital institutions are today challenged from within and without, our collective future as an economically prosperous region is itself in jeopardy.

Our research is focused on the period 1990-2000, the last complete decade bracketed at both ends—as it happens—by Censuses and economic downturns. We rely heavily on data from the respective Censuses because they remain the single best available source of information for the populations





being studied. Second, we rely on them because the 1990s can be considered a distinct economic period. The side effects of business cycle-related perturbations on population at the beginning and the end of the period tend to cancel each other out, permitting a more reliable interpretation of long-term trends.

We have approached the task with an understanding that the region has grown even more diverse since the data was first collected—much more than many may realize. One consequence is that each state now faces more unique and complex challenges than at any time in the past. There is then no single panacea; individual states must develop separate policies that take account of their distinct histories and often starkly different population profiles. For our part, we close this Brief by offering several policy suggestions of our own—not as a definitive set of solutions but as a starting point for the public discussions we hope will ensue.

This Brief grows out of a more comprehensive research initiative expected to be released later this year. Drawing on additional non-Census data collected from each of the six New England states, the upcoming study, entitled *New England 2020,* attempts to explain the complex relationships between demographic trends, educational attainment, and workforce needs. We believe that an appreciation for the long-term outcomes of current trends and the inadequacies of existing policy responses is vitally important at this time of continued economic uncertainty for so many New Englanders.

New England 2020 is itself a sequel to a prior report entitled *Beyond 2000: Demographic Change, Education and the Work Force.* This 1993 study, likewise sponsored by the Nellie Mae Education Foundation, measured the increasing labor market premiums placed on educational attainment. Using 1990 Census data it predicted possible stagnation in the education level of the region's labor force, and highlighted barriers limiting higher education access. With premiums to educational attainment becoming ever larger during the intervening decade, we believe the forthcoming update makes good sense.

Key Findings

- Slow growth for the region has clearly resulted from low levels of in-migration, and not from the other potential causes of slow growth such as smaller net rates of natural increase (excess births over deaths). **(Section II)**

- More than 86% of the change in the population of the New England states over the last five decades of the 20th century can be explained by net in-migration. **(Section II)**





- Connecticut and Massachusetts suffer persistent out-migration of their mid-life and older working-age populations. In Connecticut, the loss of 40-64 year-olds (between 1990 and 2000) was significant—an 85,000-person loss. The loss in this age group represents 3.92% of the state's working-age population. Massachusetts fares little better. Its 96,000-person loss represents roughly 2.5% of the working-age population. **(Section III)**

- About one-third of young in-migrants aged 15-19 arriving in Maine, New Hampshire, and Connecticut have come for school purposes. Even more noticeable, more than half of those aged 15-19 coming to Rhode Island, Massachusetts, and Vermont, come for school. **(Section IV)**

- A close look at the age 20-24 category similarly reveals that education is the motive for migration for the majority of in-migrants in all New England states except Connecticut and Maine. Even these two states are close with 43 and 44 percent of their age 20-24 populations arriving for education purposes, respectively **(Section IV)**

- In all states but New Hampshire and Maine, the in-migration rate for college-age students is more than twice as high as the rate of migration for the general population. **(Section V)**

- Despite the reputation that highly selective private institutions in Massachusetts enjoy as schools that draw deeply from national pools, the Commonwealth only ranks third in relative terms among New England states in such a draw. Only 45% of Massachusetts private college students come from out-of-state compared to Rhode Island and Vermont's private institutions which draw 56% and 46% of their private students, respectively, from outside of their borders. **(Section VI)**

- Rhode Island and Vermont attract 47% and 45% of their total students from outside their states, while the other four New England states attract much less (35% or less) of their total students from elsewhere. **(Section VI)**

- Because so much of the demographic change in the New England states is associated with college attendance and student decisions about educational programs, public policy initiatives with the most potential to foster in-migration are those aimed at improving the quality, access, and affordability of our higher education institutions. **(Section VII)**

- The college experience introduces a new population to the various states, but whether this population remains or not, is a function of what the state economy offers once students complete





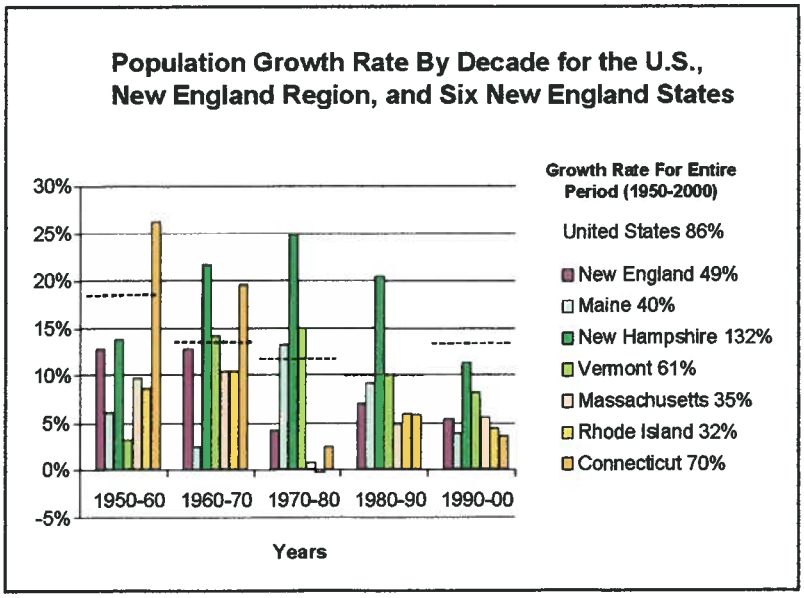
their baccalaureates. And the economic atmosphere today is clouded not only by the question of job opportunities, but also by the question of living costs. **(Section VII)**

I. Demographic Change in New England

New England, like the rustbelt region, has grown in population much more slowly than the rest of the nation. Growth in the region over the last half of the 20th century was largely associated with internal regional redistribution, with some states exceeding the nation over the period—but only primarily as a result of their draw from other states in the region. Overall growth in New England has persistently lagged behind the rest of the country, growing from 1970 to 2000 at less than half the U.S. rate.

Figure 1 shows that in the 1950s—despite the end of the nation's wartime footing, the development of "commuterization," and the dramatic takeoff of the national economy— Connecticut alone among the region's states outgrew the nation.[1] This may have been the only *real* regional growth in the last half of the 20th century. Of course, this was mainly the result of residential choices made by workers in the greater New York metropolis looking for more land and larger homes even at a cost of long daily commutes.

Figure 1: Growth in the Population of New England States



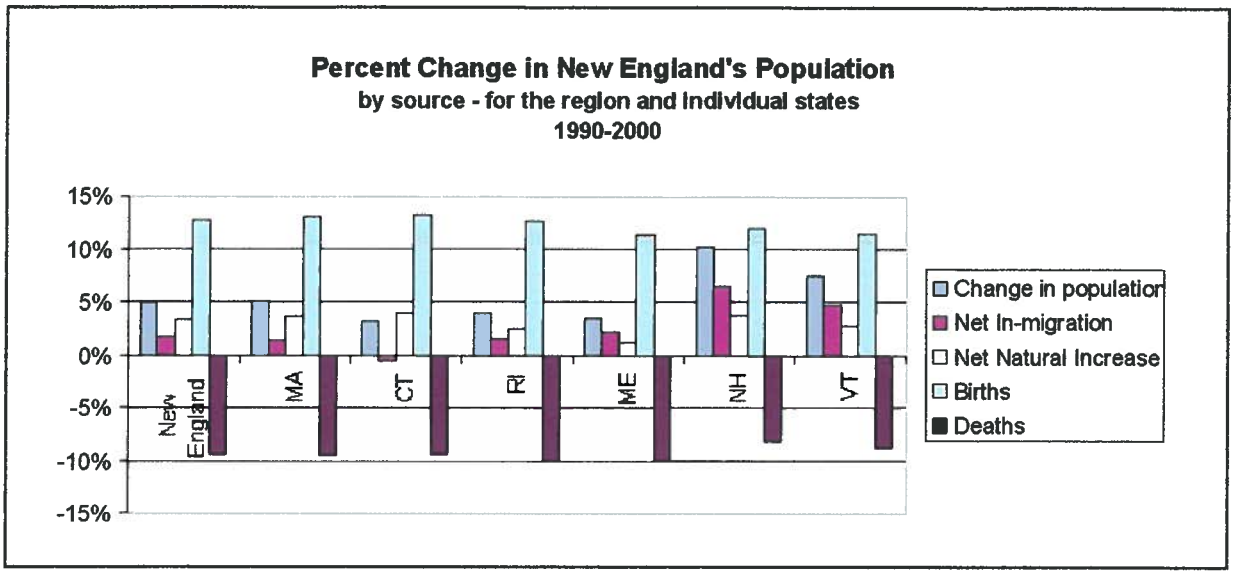
The strong growth in Connecticut lasted only into the 1960s. Besides Connecticut, the only states in the region to outgrow the nation in the last half of the 20th century were the increasingly appealing, predominately rural, northern tier states of New Hampshire and Vermont. These two New England states grew faster than the nation in the 1960s and 1970s, though they were joined briefly during the 1970s by Maine.

[1] **Figure 1** shows, in a dashed line for each decade, the national growth rate. Bars represent State population growth during each decade; those bars that pass through the dashed lines indicate State growth that exceeds U.S. growth.





Figure 2: The Sources of New England's Population Change in the 1990s



And what is true about this northern-southern split is equally true for the region as a whole: **Figure 2** shows how slow growth for the region reflects low levels of in-migration, rather than other potential causes of slow growth such as small net rates of natural increase (excess births over deaths).

In fact, when we calculate the square of the correlations of the net in-migration and net natural increase with the change in population (**Table 1**), we find that more than 86% of the change in the population of the New England states over the last five decades of the 20th century can be explained by net in-migration. By comparison, only 11% of such change is then explained by the natural increase.[2]

Table 1: The Overwhelming Influence of In-Migration on Population Growth in New England From 1950-2000

Two Factors Behind Population Growth In New England And Their Relative Contribution To Overall Growth

Net In-migration	**86.6%**
Net Natural Increase (excess births over deaths)	**11.4%**

[2] **Table 1** reports the squared correlations which give the percentage of the change in any one variable that can be explained by any other, assuming a simple bivariate relation between pairs of variables.





By the 1980s, New Hampshire, with its low taxes, continued alone to grow faster than the U.S. However, growth in the northern tier New England states did little more than absorb those relocating from southern New England; the migratory flows represented little net influx from elsewhere in the U.S. Further, losses of southern tier population to their northern regional cousins were not enough to explain all of the losses in population in the southern tier.

The net result of these regional population declines was a dual loss of both "person power" throughout all New England labor markets, as well as political power in Congress. Reports like *Blueprint 2000* in Massachusetts during the 1980s, came surprisingly late in recognition of the demographic dilemma faced by the region. Neither was this type of analysis widely pursued. Reports documenting the population declines were issued only in southern tier states that could not help but recognize their loss of labor force during the 1980s.

With the loss of Massachusetts' first seat in the House of Representatives in the 1970s, the region's political power began to decline. In all, three congressional seats across the region were lost in three decades, representing 12% of New England's prior regional representation. Increasingly, the region began to ask itself: What happened? Why can't we seem to hold onto our population? What does this bode for the future viability and health of New England states? These questions linger today.

This Brief is then a response to the above question that grounds itself in a search for simple facts about the New England region's growth. We begin not with any particular theoretical framework that would direct us to any one set of explanations, but with a search for facts—just how has the population changed in the region when compared to the nation and among the six states themselves? We believe the underlying causes of change in the region will—in the course of our documenting some basic facts—reveal themselves readily.

II. The Most Important Source of Population Growth For New England States

Identifying the prime engine of population growth in New England states is not a challenging task, as **Figure 2** indicates. While the graph shows slow growth across the states (generally less than 5%), most telling is the difference between the faster growing northern tier states and the slower growing southern tier states. At the heart of this difference is a disparity in the level of net in-migration.





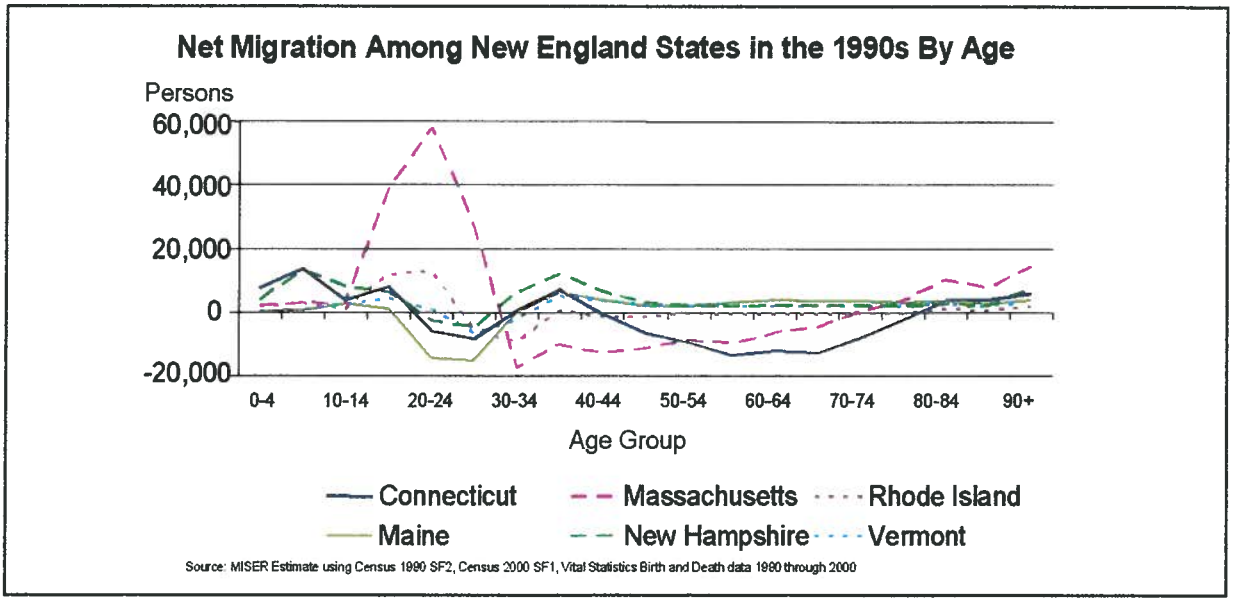
III. The First Clue As To Who Is Coming—The Age of In-Migrants

Because of the special role of migration in regional growth, we now turn our attention to the age of the migrating population, maintaining a narrow focus on the period from 1990 to 2000.

Figure 3 examines the varying levels of migration by age across the region. It shows similarities in migration patterns with only a few notable exceptions. The exceptions are worth comment. One of the exceptions evident in **Figure 3** is the contrast between those states displaying small but positive amounts of net in-migration of their population aged 40-64 (sometimes even up to age 69) and those with out-migration in the same age group.

Connecticut and Massachusetts suffer persistent out-migration of their mid-life and older working-age populations. In Connecticut, the loss of 40-64 year-olds between 1990 and 2000 was significant—an 85,000-person loss. The loss in this age group represents 3.92% of the state's working-age population. Massachusetts fares little better. Its 96,000-person loss represents roughly 2.5% of the working-age population. These population losses surely represent a loss of significant permanent economic capacity.

Figure 3: States Show Similarities & Differences in Migration Patterns By Age







The second exception to the otherwise broad similarities in migration across the New England region is the sizable differences in migration levels for those aged 15-34. In all cases, the difference in the migration of persons 15-34 when compared with the migration of those older or younger is sizable. As will be discussed, it is most likely due to the powerful effect of higher education decision-making. In some states, like Massachusetts and Rhode Island, there is significant net in-migration for purposes of attending college. In other states such as Maine, Connecticut, and New Hampshire, there is significant net out-migration for college or post-graduate schooling.[3]

The negative net migration numbers in the working-age populations of Connecticut and Massachusetts as shown in **Figure 3** suggests the difficulty these two largest New England states have had in maintaining their primary working-age populations. Despite positive economic conditions, high employment rates, and healthy income gains for much of the 1990s relative to the rest of the nation, the economies in Connecticut and Massachusetts evolved during this period in ways that may have undermined their ability to maintain a sizable southern and central New England population. Intense competition facing local companies from out-of-state or international competitors may have contributed. Decisions by local companies to restructure in the face of competition by relocating some operations out-of-state while maintaining high wage and salary income for remaining employees also help explain the phenomena.

IV. In-Migrants Are Young, But Are They Students?

The previous section shows the relative youth of in-migrants, but is there hard evidence that they are largely college students? Census data supports a definitive, yes.

Figure 4 is based on the number of people in each New England state in the year 2000 who reported living elsewhere five years earlier but who still, at the time of the 2000 Census, were enrolled in post-secondary college programs.[4] This approach allows us to effectively aggregate all those who annually migrated to a New England state during the five years 1995-2000.[5]

Figure 4 makes clear that about one-third of young in-migrants aged 15-19 arriving in Maine,

[4] **Figure 4** is based on detailed Census 2000 PUMS data.

[5] It is worth noting that, as some students may finish an undergraduate degree in exactly four years (the nominal time for a "four-year" baccalaureate degree), **Figure 4** likely understates the function which college plays in migration decisions. This is a complicated question since years spent in school toward a "four-year" degree is quite variable. Similarly variable is the continuity of progress at a single school and the potential starting date for the cohort that was a) elsewhere in 1995, b) in a specific N.E. state in 2000, and c) enrolled in school. On the other hand, many of the cohort that moved in Fall 1995 would have graduated in 1999 (others in 2000 or later, getting counted as still in school by the 2000 Census). If maintaining residence in their college state, they would look like in-migrants not enticed by college when actually they are. Hence our use in the text the phrase "likely understates."

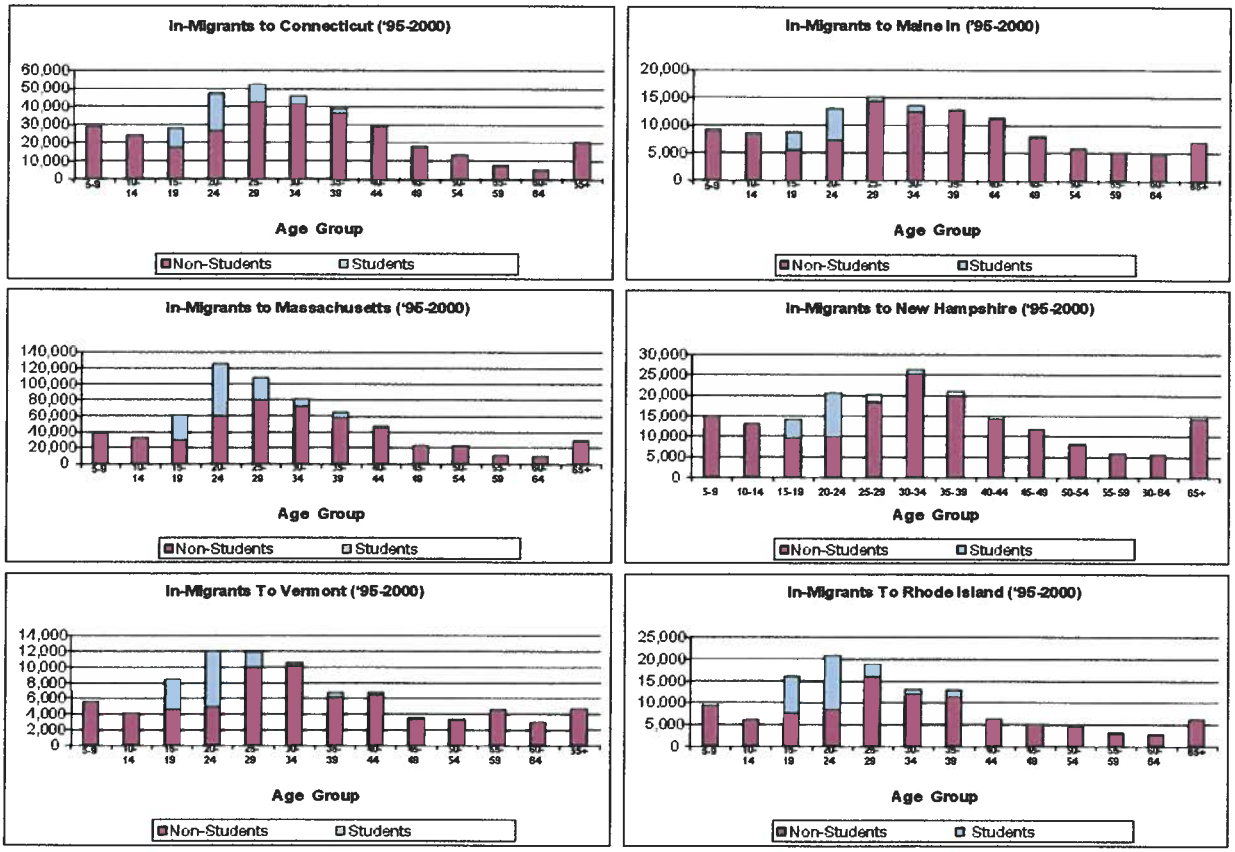




New Hampshire, and Connecticut have come for school purposes.[6] Even more noticeable, more than half of those aged 15-19 coming to Rhode Island, Massachusetts, and Vermont, come for school.

For all but Massachusetts, Rhode Island, and Vermont, the percentages rise sharply in the age range 20-24, showing the prominence of traditional undergraduates entering college at 17-18 in Rhode Island, Massachusetts, and Vermont. A close look at the age 20-24 category similarly reveals that education is the motive for migration for the majority of in-migrants in all New England states except Connecticut and Maine. Even these two states are close with 43 and 44 percent of their age 20-24 populations arriving for education purposes, respectively.

Figure 4: In-migration and Participation in College at the Time of In-migration For Each of the New England States For the Period 1995 Through 2000



[6] Stark differences exist in the migration behaviors of those coming into New England by age and by the orientation of these migrants toward college. However, for every state in New England there appears to be a greater number of in-migrants among the younger population (over 17 and less than 35). This reflects what is often called a greater "propensity" to migrate of some groups compared with other groups. Such "propensity" is a phenomenon of age. Many researchers have noted that the propensity of those in a certain age category to migrate holds reasonably constant over time for any given region. See Morrison, P.A., 1969, "Probabilities from Longitudinal Records," in E.F. Borgatta (ed.), Sociological Methodology, San Francisco, Josey Bass, pp. 286-294; Greenwood, M.J., 1968, "An analysis of the Determinants of Geographical Labor Mobility in the United States," Review of Economics and Statistics, vol. 51, pp. 189-204; and Shaw, P.R. Migration Theory and Fact, Bibliography Series Number Five, Regional Science Research Institute, Pennsylvania, 1975.





For ages greater than 25, the percentage of those arriving for education drops significantly lower. The overall in-migration rate gradually declines as well, with the qualified exception of New Hampshire. In the Granite State in-migration remains strong for those in their thirties. In this case, in-migration may be more a function of people arriving for new jobs, coupled with a perception of lower tax burdens and living costs.

V. Additional Evidence For College-Age Migrants As A Source of Growth

Figure 5 shows several interesting features of gross in-migration in New England states.[7] Most important, for all states, one can see the preponderance of in-migration in the college-age categories. In every case, the second of the columns for each state far surpasses the first and third columns indicating higher propensities of migration among college-age populations, compared to the general and the working-age population.

...the in-migration rate for college-age students is more than twice as high as the rate of migration for the general population.

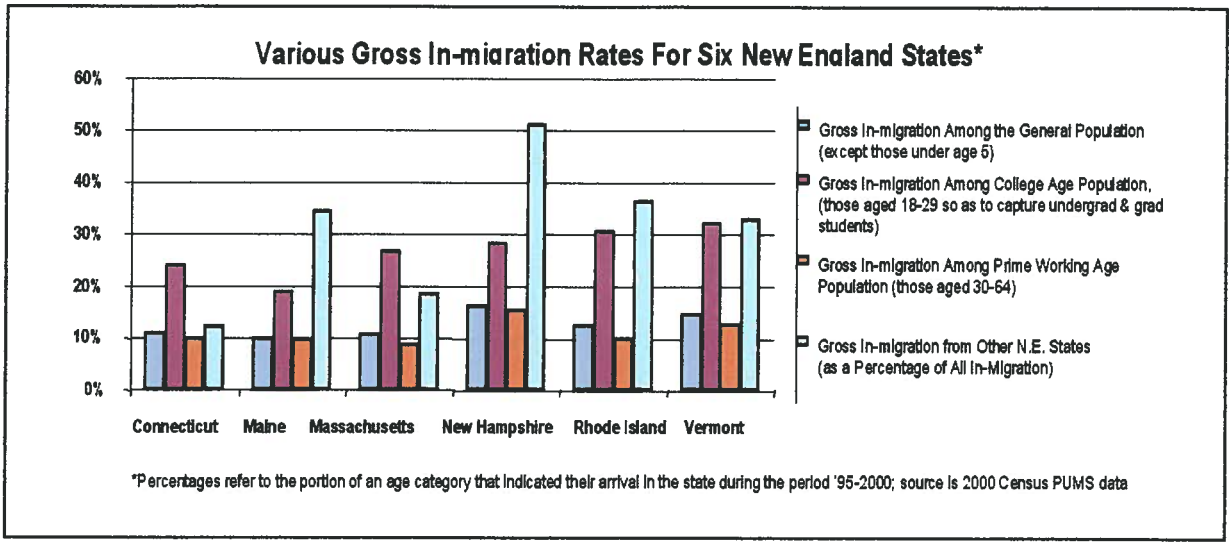
In all cases but New Hampshire and Maine, the in-migration rate for college-age students is more than twice as high as the rate of migration for the general population.

Also of note, New Hampshire attracts the fewest migrants from outside the region—the most from within. This is consistent with the perception that New Hampshire mainly grows as the result of relocation from within the region. But surprisingly Rhode Island, and less surprisingly, Vermont and Maine follow in close proximity.

Finally, a word on flows within the region: Massachusetts and Connecticut attract the lowest percentage of their in-migrants from other states within the region. Connecticut brings in only a little over 10% of all of its in-migrants from within the region; Massachusetts brings in nearly 20% from within the region, largely because of its absorption of college students from outside the New England states.

[7] **Figure 5** is based on detailed Census 2000 PUMS data.

Figure 5: The Percentage of In-Migrants Varies Greatly Depending On the Age Group Being Considered (chart also shows different rates of gross in-migration from other New England states)



VI. A Closer Look At Student Enrollments In The Region

As we have noted, student-age populations have a much higher propensity to migrate than the rest of the population. Thus a closer view of the origins of student populations enrolled in each state's higher educational system is useful.

Figure 6 shows data on the origin of all student enrollments by state and by type of institution.[8] Here, however, rather than relying on individual institutional reports used in compiling IPEDS, the data is derived from a large, 1% sample of the population. Persons in this sample were asked: whether they were enrolled in school at the time of the 2000 Census, in what sector (public or private), and where they lived five years earlier in 1995.[9]

[8] This data was derived from the 2000 Census Public Use Microdata System (PUMS). It is similar to that contained in the biennial series from the National Center for Educational Statistics (NCES) Institutional Post-secondary Educational Data System (IPEDS). The IPEDS data is done only biennially and has a very long lag time before it is reported for public use. At the time that we computed these data from PUMS, the latest IPEDS data available was for 1998.

[9] Some who report that they lived somewhere other than in a specific New England state in 1995 and who were in school in the state in 2000 may have moved into that state prior than 2000 for purposes other than their pursuit of education and then decided on going to school after migrating. But we suspect that we will have identified most persons correctly as arriving from other states and for college purposes.





Figure 6: Origin of Students Enrolled in Each New England State

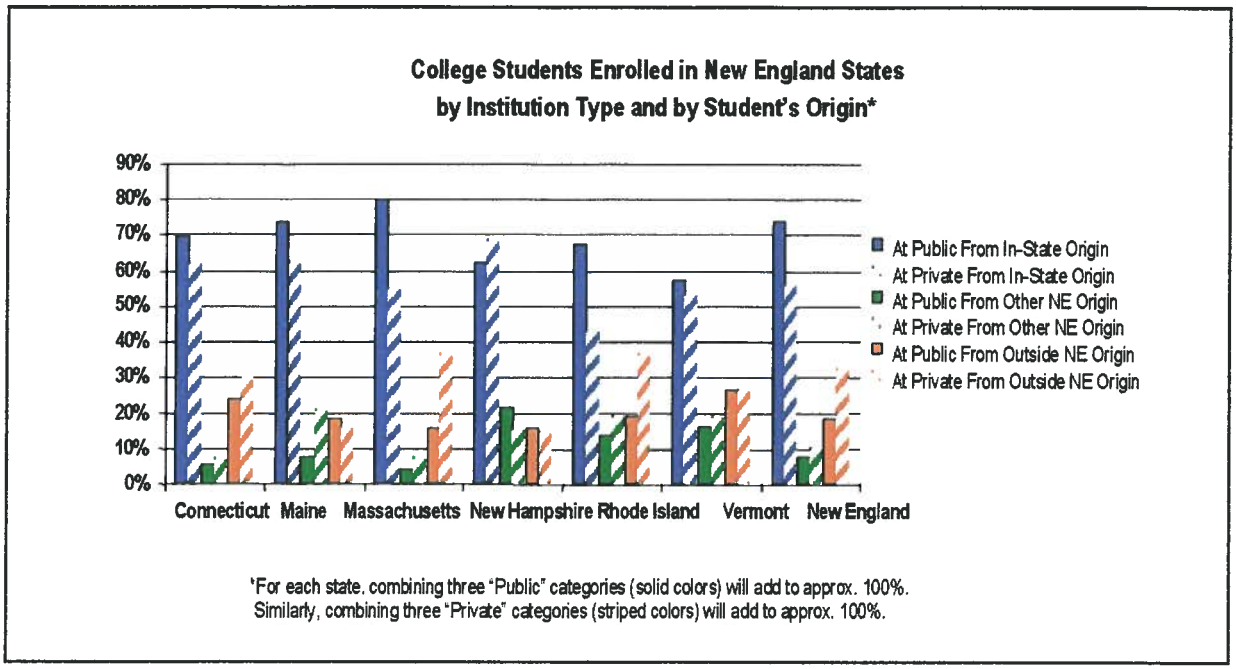


Figure 6 shows that Massachusetts in the late 1990s ranked highest in the percentage of the public institution students coming from in-state origins (80%). Maine and Connecticut trailed a reasonable distance behind at 74% and 70%, respectively. This has been the result of a long-standing state mandate in Massachusetts that public institutions limit their out-of-state draws.[10]

Figure 6 reveals interesting developments among private sector institutions as well. For example, despite the reputation that highly selective private institutions in Massachusetts enjoy as schools that draw deeply from national pools, the Commonwealth only ranks third in relative terms among New England states in such a draw. Only 45% of Massachusetts private college students come from out-of-state compared to Rhode Island and Vermont's private institutions which draw 56% and 46% of their private students, respectively, from outside of their borders.

Given the complex and diverse mix of students enrolling in the public and private institutions in the various states, it is somewhat surprising that, in terms of the total draw of students from outside the region, only Rhode Island and Vermont look much different from the others, as shown in **Table 2**. Whereas Rhode Island and Vermont attract 47% and 45% of their total students from outside

[10] The University of Massachusetts throughout much of the 1990s operated under restrictions requiring that the percentage of undergraduates coming from outside of the Commonwealth be kept under 15%. This requirement was subsequently lifted; yet, in all the New England states the expectation remains that schools receiving public support should reserve the majority of their slots for in-state residents.





their states, the other four New England states attract much less (35% or less) of their total students from elsewhere.

Table 2: New England States Have Varying Levels of Students With Origins Outside the State

Table 2: College Student Enrollments Originating From Outside the State

Rhode Island	47%
Vermont	45%
Massachusetts	35%
New Hampshire	34%
Connecticut	34%
Maine	32%

Returning to **Figure 6**, notice that New Hampshire and Rhode Island, followed quite closely by Vermont, enroll the largest percentage of their students from other New England states. These range from 15% in Vermont to 19% in New Hampshire.

According to **Figure 6**, the states drawing most heavily from outside of the region are, in order of rank: Massachusetts, Connecticut, Rhode Island, and Vermont. Rhode Island and Vermont can be characterized as drawing the most from out-of-state overall because they are the only two States that draw both from other New England states and from outside of the region. For their part, it appears that Massachusetts and Connecticut draw relatively better from beyond the region, while Maine and New Hampshire draw relatively better from within the region.

Conclusions

Because so much of the demographic change in the New England states is associated with college attendance and student decisions about educational programs, ***public policy initiatives with the most potential to foster in-migration are those aimed at improving the quality, access, and affordability of our higher education institutions.***





Particularly important are business/higher education/K12 partnerships that develop college aspirations and college readiness as early as middle school. Such partnerships—by boosting college participation rates—would help us make the most of our existing native population as a potential economic resource. This is especially important during a time when population growth is low and continued in-migration of workers from elsewhere remains uncertain.

...boosting college participation rates would help us make the most of our existing native population as a potential economic resource.

Also worthy of consideration are campus-to-workplace "bridge" programs in which industries, state policy-makers, and higher education institutions collaborate much more closely to move recent graduates directly into those areas of the labor force generating the most demand for new workers. The need is to expand and "systematize" internship opportunities so students develop connections to potential workplaces long before graduation.

Finally, it should be noted that a vibrant higher education system allows states "a foot in the door" but does not permanently inoculate states against out-migration of their former college students.

The college experience introduces a new population to the various states, but whether this population remains or not, is a function of what the state economy offers once students complete their baccalaureates or post-graduate schooling. And the economic atmosphere today is clouded not only by the question of job opportunities, but also by the question of living costs.

Housing affordability challenges...are increasingly recognized as a factor in the much-publicized "brain drain."

Housing affordability challenges affecting nearly all of eastern New England from southern Maine to Connecticut are increasingly recognized as a factor in the much-publicized "brain drain" among young, college-educated families and professionals. Addressing this issue must therefore remain a critical objective of policy-makers.

Even so, having one's foot in the door is many times more preferable to finding oneself out in the cold; and for that reason, New England remains indebted to its colleges and universities. ■





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About the Nellie Mae Education Foundation

The Nellie Mae Education Foundation, located in Quincy, Massachusetts, provides grants and other support to institutions and organizations in New England that help improve academic achievement and access to higher education for underserved students. The Foundation also funds research that examines contemporary educational opportunity issues that affect New Englanders, and convenes educators, policymakers and community members to influence public policy in education.

The views expressed herein are those of the authors and do not necessarily reflect those of the Foundation's Board, Advisors, or staff. The Foundation was created in 1998 by the Nellie Mae Corporation, a nonprofit student loan company that pioneered philanthropy in the student loan industry. No longer affiliated with the Corporation, the Nellie Mae Education Foundation is New England's largest philanthropy devoted exclusively to "opening doors" to educational achievement and equity for underserved populations in the six New England states.

We encourage you to visit the Foundation on the Web at **www.nmefdn.org.**

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