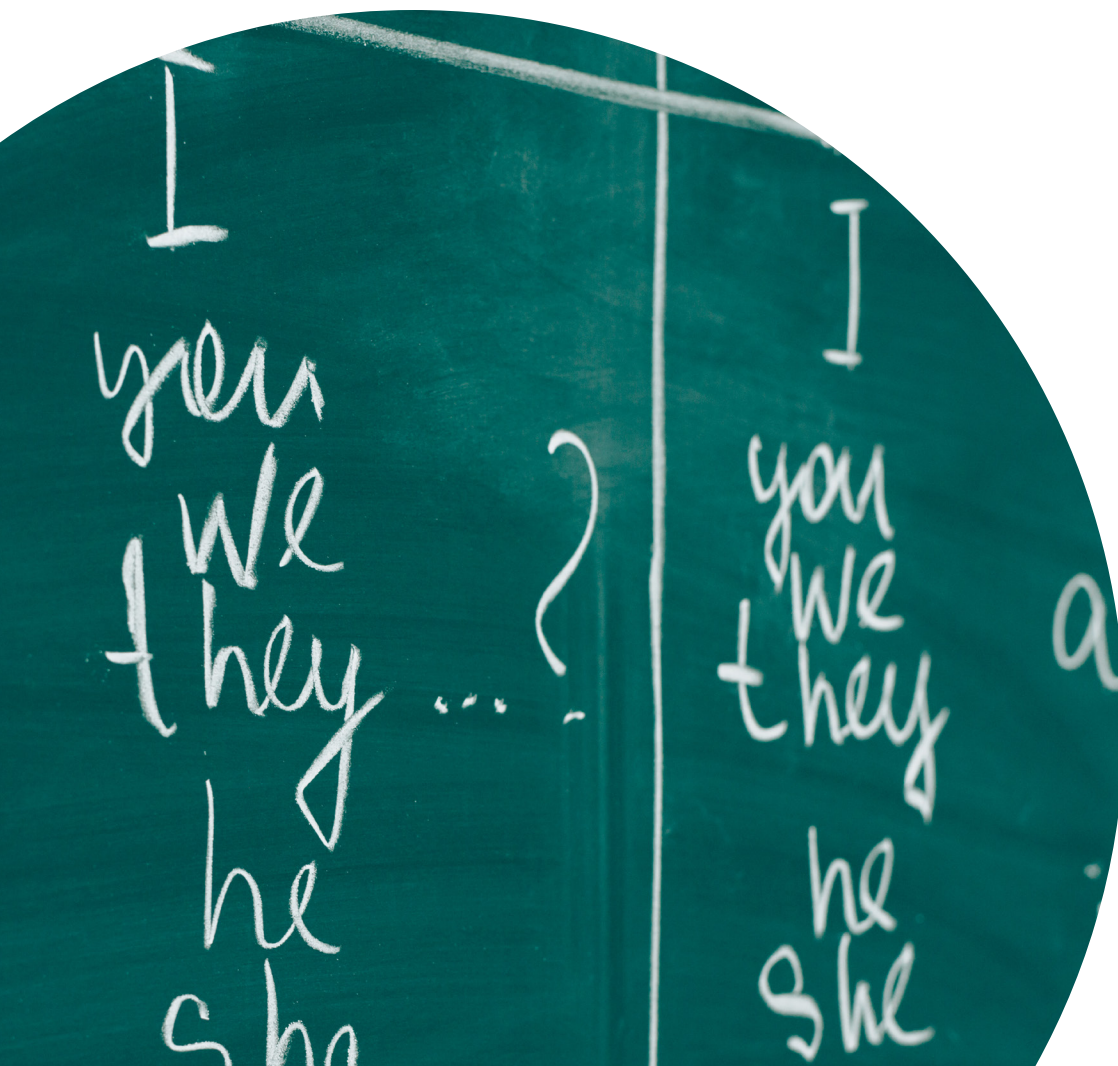


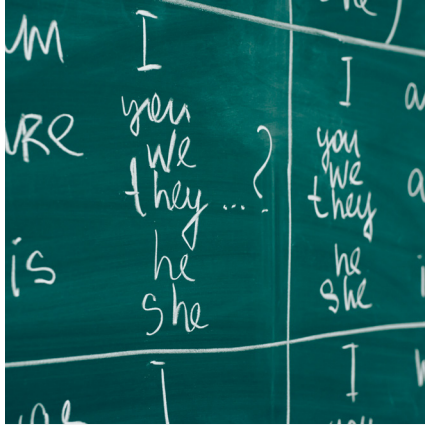


Research Report 26-2

English Proficiency and Labor Market Outcomes in New England

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Executive Summary

Proficiency in a country's primary language is a skill that can be expected to improve labor market outcomes. Considering the United States specifically, individuals with strong English-language skills presumably could fare better in US labor markets compared with individuals who are less proficient in the language. These benefits potentially are most relevant for immigrants since their English proficiency may be lower on average than it is for natives. Indeed, based on data on foreign-born persons in the United States during the 2000–2023 period, this report finds that an increase in English proficiency leads to an increased probability of labor force participation, an increased probability of being employed for those who are in the labor force, and higher average annual earnings for those who are employed—pertinent consideration for the Federal Reserve's maximum-employment mandate.

Given the importance of immigration to the economy of New England, where it plays a central role in population growth and where foreign-born persons comprise one-fifth of the labor force, the impact of increased English proficiency on labor market outcomes may be particularly relevant for the region. This report finds that in New England, greater English proficiency increases immigrants' average annual earnings by 72.5 percent and their likelihood of participating in the labor force by nearly 13 percent. However, it has no statistically detectable effect on whether a foreign-born worker is employed.

Other findings from this report's research also are relevant for programs and initiatives in New England that are designed to boost immigrants' English proficiency. These findings can inform individuals' decisions regarding whether to participate in such programs and inform related policy. First, the positive effect of increased English proficiency on earnings is large and relatively stable over time. Second, residents' typical level of English proficiency varies across the New England states and across areas within those states. This finding suggests that the scope for increased English proficiency to raise workers' earnings also varies across states and within states. Lastly, access to secondary and higher education can play a role in the effectiveness of policies designed to improve immigrants' English-language skills because schooling facilitates and amplifies the impact of English proficiency on earnings.

I. Introduction

Immigration is a key facet of New England’s economy. According to 2023 estimates using American Community Survey (ACS) microdata from the US Census Bureau, foreign-born persons aged 16 years and older comprised 20.0 percent of the labor force in the region at the time, exceeding the corresponding 19.5 percent share in the United States (Ruggles et al. 2025). In New England, the immigrant share of the workforce ranged from 5.9 percent in Maine to 24.4 percent in Massachusetts. In 2023, compared with all employed workers in the region aged 16 years and older, the subset of such workers who were immigrants were more likely to work in services (47.5 percent of immigrant employed workers versus 46.7 percent of all employed workers), manufacturing (12.0 percent versus 10.0 percent), and construction (6.9 percent versus 6.4 percent). Additionally, immigration into New England has accounted for a large share of the region’s population growth (Sullivan 2023), has helped mitigate declining or slow population growth in some northern New England municipalities (Sullivan 2019), and, contrary to some concerns, has contributed only minimally to rising earnings inequality in the region (Jackson 2019).

The scale and importance of immigration in New England have made the integration of foreign-born persons into the region’s economic markets a topic of central interest to academics, policymakers, and the public at large. English-language skills may help facilitate such integration, as such skills may be lower on average for immigrants than natives. In labor markets specifically, English proficiency could contribute to an immigrant’s potential productivity as a worker, similarly to traits such as their level of education. Alternatively, English proficiency could facilitate labor market integration for reasons unrelated to worker productivity, such as the name an immigrant lists on a resume or other aspects of job search and employment.

This report examines the relationship between English proficiency and labor market outcomes in New England and the United States from 2000 through 2023. In 2023, English proficiency differed across local areas and states within the region as well between the region and the nation. The share of foreign-born persons aged 16 years and older who speak English very well in New England (60.7 percent) exceeded the corresponding share in the United States (55.6 percent). In the region, English-proficiency rates ranged from 54.2 percent in Rhode Island to 83.4 percent in Vermont, and rates within the New England states ranged from 36.3 percent in northern Suffolk County in Massachusetts to 97.0 percent in central New Hampshire.

Whereas English proficiency rates varied greatly between the region and the nation, immigrants’ labor market outcomes in 2023 were comparable—specifically, labor force participation rates of foreign-born persons aged 16 years and older, the employed share of the labor force, and the earnings of employed persons. For the immigrant labor force participation rate, New England (68.3 percent) sat above the United States (67.2 percent), and the average annual earnings of immigrants were higher regionally (\$74,100) than nationally (\$68,000). However, New England fell just below the United States for the

share of immigrants employed (95.6 percent versus 96.0 percent). Examining how the English proficiency of immigrants compares with their labor market outcomes across states reveals a mild positive correlation. For example, a 10 percentage point increase in the share of immigrants in a state who speak English very well is associated with a 4.6 percent increase in the average annual earnings of immigrants in that state.

Due to multiple factors that likely prevent such descriptive comparisons—that is, how English proficiency compares with labor market outcomes—from showing how English proficiency directly affects labor market outcomes, this study uses statistical analysis to determine the causal effects. In New England during the 2000–2023 period, greater English proficiency increased the probability of immigrant participation in the labor force by 12.9 percent and increased average immigrant earnings by 72.5 percent. However, in the region, greater proficiency had no statistically detectable effect on the probability of a foreign-born worker being employed. In the nation during the 2000–2023 period, increased English proficiency resulted in higher average values for all three analyzed labor market outcomes. Additionally, focusing on the earnings outcome, this effect was relatively stable in the region during the observation period, with detectable earnings increases due to greater English proficiency ranging from 61.3 percent (2004 through 2007) to 112.5 percent (2000 through 2003).

Greater English proficiency increased the probability of immigrant participation in the labor force by 12.9 percent.

Additional analysis indicates that education, industry of employment, and occupation of employment all have helped facilitate increased English proficiency in New England, leading to higher earnings. This report also finds that the effects of English proficiency on earnings in the region differ depending on workers' education level and age (which can proxy for experience). These differential effects suggest that English proficiency may complement education (in that the earnings effect grows as educational attainment increases) but substitute for age (in that the earnings effect decreases as age increases).

This report's findings suggest three key implications for future policy and related decisions of immigrants in New England. First, individual-level decisions and group-level policies to achieve some level of English proficiency can be informed by an earnings effect of increased proficiency that is large and relatively stable over time. Second, areas differ in the typical English proficiency of their residents, thus suggesting differential scope across locations for increases in proficiency to affect earnings. Lastly, access to secondary and higher education can play a role in policy effectiveness since schooling facilitates and amplifies the impact of English proficiency on earnings.

Data Source and Sample Creation

Data Source

This report uses information on self-reported English proficiency, the labor market (for instance, annual earnings), and other measures from the American Community Survey (ACS) from 2000 through 2023, reflecting all years of individual-level ACS data that were available when the report's analysis was performed (Ruggles et al. 2025). The ACS is conducted monthly by the US Census Bureau to provide annual estimates of select characteristics for a subset of the nation's population (about 3.5 million housing unit addresses each year). Such detailed socioeconomic information was previously obtained from the "long form" of the decennial census, which was replaced by the ACS and discontinued after the 2000 decennial census.¹ Following Bleakley and Chin (2004, 2010), this report's analysis assigns the following English proficiency values based on ACS responses: 0, does not speak English at all; 1, speaks English but not well; 2, speaks English well; and 3, speaks English very well or speaks only English.

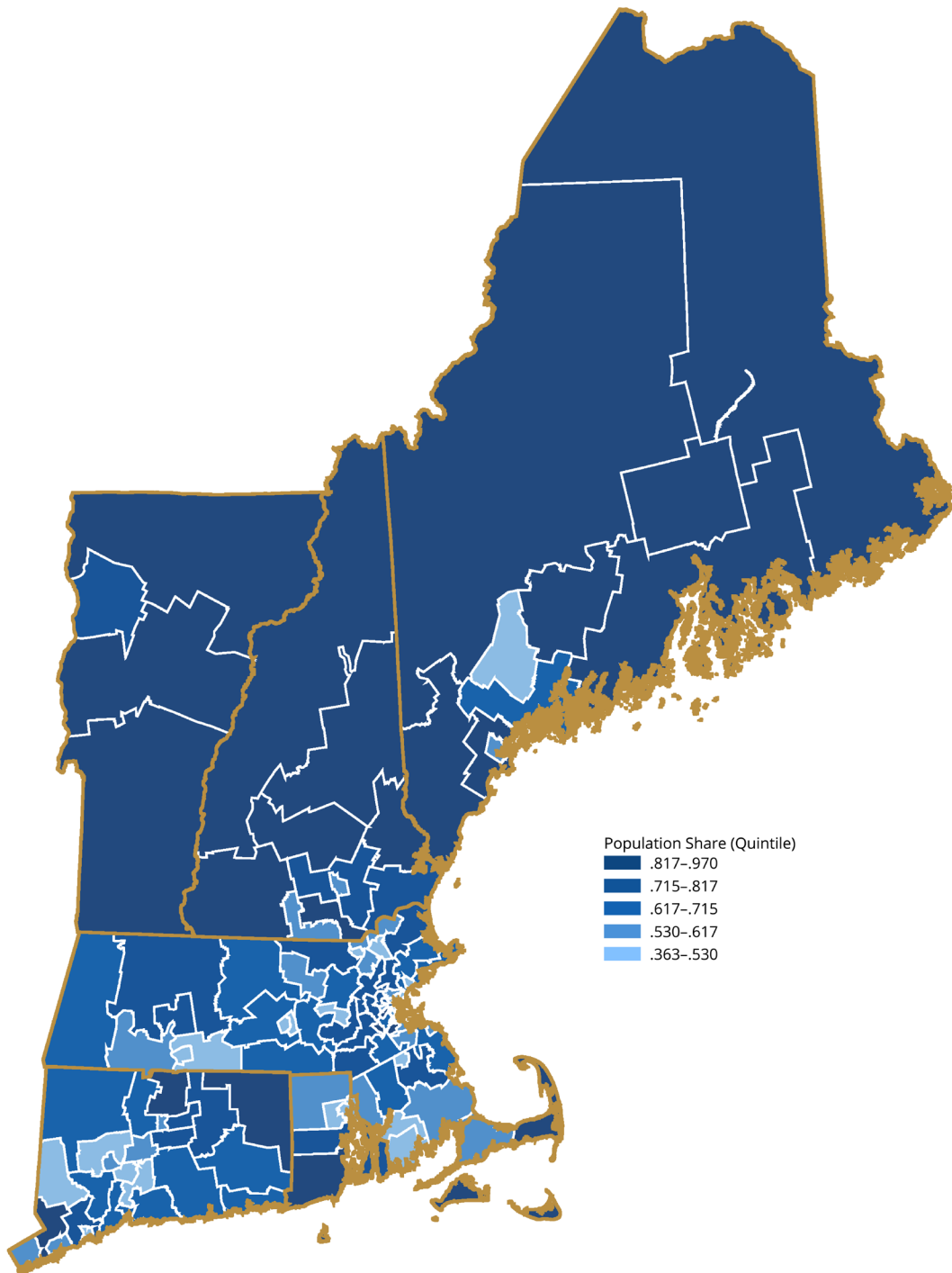
Sample Creation

After imposing an initial sample restriction to focus on persons born outside the United States, this study further restricts the sample used for descriptive analysis to concentrate on persons aged 16 years and older. The latter restriction aligns with potential inclusion in the civilian noninstitutional population from which the labor force is comprised. To analyze the impact of English proficiency on labor market outcomes in causal analysis, the report additionally drops individuals from the sample if they meet certain criteria.² Compared with individuals who are dropped, persons retained are more likely to be early prime age (25 to 39 years old) and more likely to have arrived in the United States at an earlier age. ACS person weights are applied so that the descriptive statistics reflect the full populations of interest. They are also applied to the causal analysis. For unweighted counts of US and New England residents, the descriptive sample contains 7,598,620 and 375,187 persons, respectively, while the causal sample contains 1,346,761 and 64,853 persons, respectively.

- 1 See "American Community Survey History" and "The Importance of the American Community Survey and the Decennial Census" on the US Census Bureau website. Since 2010, the decennial census has been solely a "short form" survey that is sent to every US household and provides an official count of the population in addition to basic information about household members, such as their age and sex. In addition to being sent to households in the 50 US states and the District of Columbia, the ACS goes to households in Puerto Rico (as the Puerto Rico Community Survey). The decennial census is sent to households in all five inhabited US territories (American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the US Virgin Islands) as well as households in the 50 US states and the District of Columbia.
- 2 Persons are dropped if they meet any of the following criteria: (1) age at arrival in the United States is 18 years old or older (to remove persons more likely to have made their own immigration decision); (2) the number of years since arrival in the United States is fewer than 16 or more than 60 (to remove persons of likely compulsory schooling age or who are older than 77); (3) age is younger than 25 or older than 64 (to remove persons more likely of college age or retirement age); and (4) birthplace country is not in the treatment group of non-English-speaking countries or the control group of English-speaking countries (following country designations from Bleakley and Chin 2010; among New England residents, the top three most prevalent treatment countries are Puerto Rico, Portugal, and Germany, which reflect 37.9 percent of the treatment group; the corresponding top three most prevalent control countries are Canada, Jamaica, and England, which reflect 71.7 percent of the control group). Additionally, for analysis that focuses on employment, the sample is limited to persons in the labor force. For analysis that focuses on earnings, the sample is limited to persons who are employed and have positive, non-missing, inflation-adjusted earnings (for multiyear analysis only, regarding inflation adjustments).

Figure 1: English Proficiency across Areas within New England States

New England, 2023



Source(s): 2023 American Community Survey data and author's calculations.

Note(s): Public Use Microdata Areas (PUMAs) are defined by the US Census Bureau as non-overlapping, statistical geographic areas that partition each state or equivalent entity into geographic areas containing no fewer than 100,000 people each. Color-coded quintiles for the share of immigrants in a PUMA who self-report as speaking English very well or speaking only English are displayed in the figure legend. These quintiles have ranges of values that are mutually exclusive at a greater degree of precision than the rounded values shown in the figure. The sample uses information on foreign-born persons who are at least 16 years old.

II. Descriptive Patterns of English Proficiency and Labor Markets

This report examines the English proficiency and labor market patterns of foreign-born persons aged 16 years and older in the United States and New England in 2023. The key descriptive findings are that the English proficiency of immigrants (1) differed notably within local areas of New England states; (2) was greater in the region than the nation, especially in northern New England; and (3) was positively related to labor market outcomes. This descriptive analysis is conducted using survey data on various characteristics of individuals in US households. As described in the “Data Source and Sample Creation” box on page 6, these data allow for the creation of the samples for descriptive and causal analysis. Each sample is a pooled cross-sectional data set that combines multiple years of information snapshots at a given point in time. Descriptive statistics estimated with the corresponding data set reflect the full populations of interest given the use of survey sample weights; these weights also are applied in the causal analysis.¹ Due to the restrictions imposed on the causal-analysis sample, individuals in that sample tend to be younger and have a younger average age of arrival in the United States compared with individuals in the descriptive-analysis sample. The latter feature is further highlighted later in the report when the approach used for the causal analysis is discussed.

Rates of English proficiency vary notably within the New England states. Figure 1 maps quintiles of the region’s 2023 shares of foreign-born persons aged 16 years and older in Public Use Microdata Areas (PUMAs, which are US census areas of at least 100,000 people) who speak English very well. These rates ranged from 36.3 percent (Suffolk County [North] of Massachusetts) to 97.0 percent (Central Region of New Hampshire).

English proficiency ranged from 36.3 percent in Massachusetts' northern Suffolk County to 97 percent in central New Hampshire.

By comparison, corresponding local rates of English proficiency for native-born persons aged 16 years and older ranged from 93.8 percent (Waterbury Town of Connecticut) to 100.0 percent (Norfolk County [Quincy] of Massachusetts and Outer Manchester City of New Hampshire). Thus, the ability to speak English very well seemingly reflects native-like proficiency. Among the New England states, Vermont had the narrowest range of local rates of immigrant English proficiency, from 81.0 percent in Chittenden County to 90.1 percent in Southern Vermont. Massachusetts had the widest range, from 36.3 percent in Suffolk County (North) to 90.4 percent in Barnstable (East), Dukes, and Nantucket Counties.

Additionally, local areas of northern New England had higher rates of English proficiency by foreign-born residents than local areas of southern New England. Specifically, 16 of the 24 PUMAs (66.7 percent) in Maine, New Hampshire, and Vermont had English proficiency rates in the highest quintile compared with six of the 86 PUMAs (7.0 percent) in

¹ See Solon, Haider, and Wooldridge (2015) for a discussion of potential valid motivations for including weights in causal analysis.

Table 1: English Proficiency in New England Compared with United States

New England and United States, 2023

Share of Foreign-born Persons (age 16+) Who Speak English						
Area	Very Well	Rank (NE/US)	At Least Well	Rank (NE/US)	At Least Somewhat	Rank (NE/US)
Connecticut	0.611	4/23	0.807	4/18	0.952	4/15
Maine	0.777	2/4	0.888	2/6	0.990	2/3
Massachusetts	0.588	5/29	0.774	5/33	0.910	5/43
New Hampshire	0.752	3/6	0.869	3/8	0.966	3/9
Rhode Island	0.542	6/45	0.739	6/46	0.902	6/46
Vermont	0.834	1/1	0.979	1/1	0.992	1/2
New England	0.607	1	0.791	2	0.927	4
United States	0.556	8	0.754	8	0.915	8

Source(s): 2023 American Community Survey data and author’s calculations.

Note(s): The sample uses information on foreign-born persons who are at least 16 years old. Share values for speaking English “very well” include speaking “only English.” The US ranking for states includes the District of Columbia, and the region ranking includes the nine census divisions and the United States.

Connecticut, Massachusetts, and Rhode Island. Accordingly, only one of the 24 PUMAs (4.2 percent) in the northern region—Androscoggin County, Maine—had an immigrant English proficiency rate in the lowest quintile, compared with 21 of the 86 PUMAs (24.4 percent) in the southern region. This northern–southern disparity may be partly related to a lower prevalence of immigrants in northern New England, which might relate to immigrant characteristics.²

English proficiency of immigrants varies widely across, as well as within, the New England states. Table 1 shows the 2023 English proficiency rates of foreign-born persons aged 16 and older in the New England states as well as the corresponding regional and national rankings (including the District of Columbia). Proficiency is measured as the share of immigrants in an area (specifically, a state or broader region) who speak English either very well (the same measure in Figure 1), at least well, or at least somewhat (that is, at a minimum, speaks English, but not well). Across all three metrics, English proficiency in New England exceeded proficiency in the United States. Focusing on the first metric because it aligns with native-like ability, this report finds that the English proficiency rate

2 Based on 2023 ACS microdata with person weights applied (Ruggles et al. 2025), the immigrant share of the overall population (all ages) in New England is 17.2 percent compared with 16.0 percent in the United States. The analogous immigrant share was 5.1 percent in Maine, 8.4 percent in New Hampshire, and 5.4 percent in Vermont—the northern New England states. The immigrant share was 20.0 percent in Connecticut, 21.1 percent in Massachusetts, and 16.8 percent in Rhode Island.

Table 2: Labor Market Outcomes in New England Compared with United States

New England and United States, 2023

Foreign-born Persons (age 16+)						
Area	Share Who Are in the Labor Force	Rank (NE/US)	Share in Labor Force Who Are Employed	Rank (NE/US)	Average Annual Earnings (Thousands USD)	Rank (NE/US)
Connecticut	0.674	4/35	0.950	4/44	70.9	3/10
Maine	0.644	6/46	0.993	1/2	65.2	5/20
Massachusetts	0.693	2/26	0.960	3/32	77.2	2/5
New Hampshire	0.687	3/28	0.946	5/47	80.6	1/3
Rhode Island	0.652	5/43	0.940	6/50	59.8	6/30
Vermont	0.711	1/18	0.969	2/12	70.0	4/13
New England	0.683	4	0.956	9	74.1	2
United States	0.672	7	0.960	6	68.0	4

Source(s): 2023 American Community Survey data and author’s calculations.

Note(s): The sample uses information on foreign-born persons who are at least 16 years old. The US ranking for states includes the District of Columbia, and the region ranking includes the nine census divisions and the United States.

of immigrants in the region (60.7 percent) ranked first among the nine US census divisions and higher than the national rate (55.6 percent). The corresponding proficiency rate in each New England state except Rhode Island (54.2 percent, ranked 45th in the nation) was greater than the US rate. The English proficiency rate in Vermont (83.4 percent) was ranked first in the nation. Proficiency rates in Maine (77.7 percent) and

New Hampshire (75.2 percent) also ranked high nationally, at fourth and sixth, respectively. Thus, similarly to Figure 1, Table 1 indicates a higher level of English proficiency in northern New England relative to southern New England.

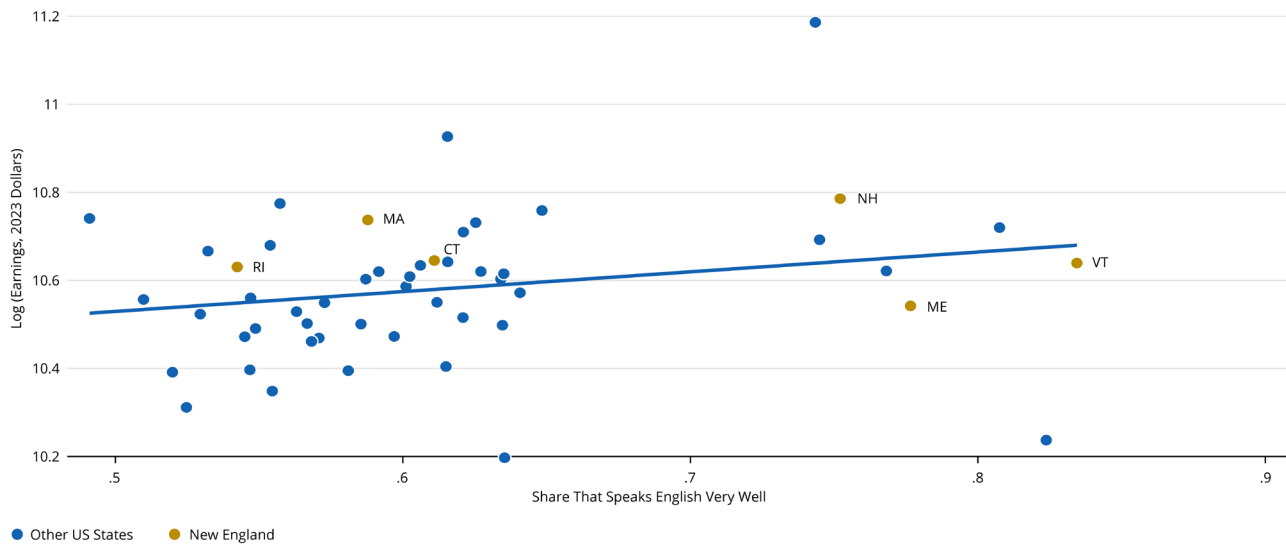
Turning to labor market outcomes, Table 2 shows the 2023 values of three labor market measures for foreign-born persons aged 16 and older in the New England states along with regional and national rankings (including the District of Columbia). The labor market outcomes analyzed are the share in the labor force, the share employed, and average annual earnings.³ For each of the three measures, the labor

The English proficiency rate of immigrants in New England (60.7 percent) ranked first among the nine US census divisions.

3 As noted in the “Data Source and Sample Creation” box on page 6, for analysis of employment, the sample is limited to persons in the labor force, whereas for analysis of earnings, the sample is limited to persons who are employed and have positive, non-missing earnings.

Figure 2: English Proficiency and Average Log Annual Earnings

New England, 2023



Source(s): 2023 American Community Survey data and author's calculations.
 Note(s): Share values for speaking English "very well" include speaking "only English." A linear fit is shown in the figure for the New England states and all other US states combined (including the District of Columbia). The sample uses information on foreign-born persons who are at least 16 years old. Average log annual earnings are in 2023 US dollars.

outcome in New England was similar to the US value. That said, the (approximate) immigrant labor force participation rate was relatively higher in the region (68.3 percent; 67.2 percent in the United States), as was the average annual earnings of immigrants (\$74,100; \$68,000 in the United States).⁴ However, the share of immigrants who were employed was relatively lower in New England (95.6 percent; 96.0 percent in the United States). Across the New England states, the corresponding labor market outcomes were relatively comparable. The labor force participation rate ranged from 71.1 percent in Vermont (18th in the nation) to 64.4 percent in Maine (46th in the nation). The share of immigrants employed ranged from 99.3 percent in Maine (second in the nation) to 94.0 percent in Rhode Island (50th in the nation), while average annual earnings varied from \$80,600 in New Hampshire (third in the nation) to \$59,800 in Rhode Island (30th in the nation).

This report next explores the relationship between immigrant English proficiency and labor market outcomes. Figure 2 shows the correlation between state-level observations (including the District of Columbia) of those two types of measures in 2023 using a scatterplot and linear fit. For reasons stated earlier, the focal measure of English proficiency remains the share of immigrants in an area (state) who speak English very well. For labor market outcomes, the focal measure is average log annual earnings of immigrants, to help align with some of the forthcoming causal analysis (and noting that

4 As alluded to in the "Data Source and Sample Creation" box on page 6, the labor force participation rate analyzed in this study is approximate because it reflects the share of foreign-born persons aged 16 years and older who are in the labor force rather than the share of foreign-born persons aged 16 years and older and part of the civilian, noninstitutional population who are in the labor force.

similar relationships are observed when examining immigrant rates of labor force participation or employment instead). The log (natural logarithm) of a measure is a mathematical transformation that converts each initial value into a distinct final value, with resulting properties that help validate and facilitate the report's statistical analysis of earnings (including minimizing extremely high values and their influence).⁵ As the figure shows, in 2023, the average annual earnings of immigrants were somewhat higher in states with higher rates of immigrant English proficiency. Specifically, a 10

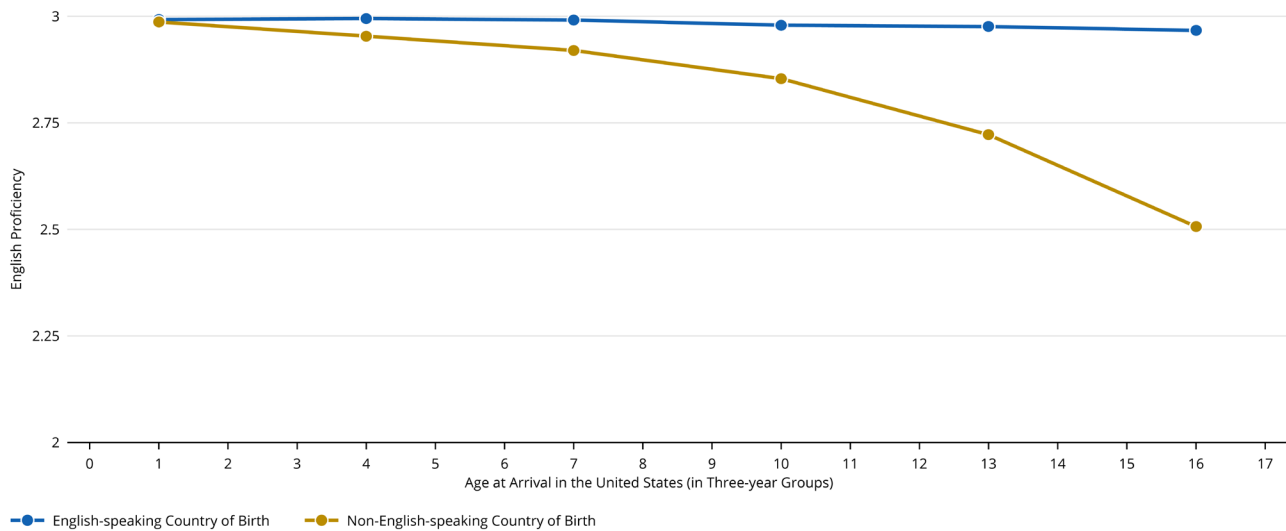
At the state level, the relationship between English proficiency and earnings is positive but weak.

percentage point increase in a state's share of immigrants who speak English very well is associated with a 4.6 percent increase in the average annual earnings of immigrants in that state, or roughly \$3,100.⁶ However, statistically, this earnings increase does not differ from zero, so at the state level, the relationship between English proficiency and earnings is positive but weak.⁷

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- 5 Formally, for some measure, x , the natural logarithm, $\ln x$, will equal a transformed measure, y . Accordingly, $y = \ln x$, and $x = e^y$ or $\exp(y)$ (interchangeable notations), where e is a mathematical constant roughly equal to 2.71828 and "exp" refers to "exponential" in shorthand. For instance, if $x = 1,000$, then $\ln 1,000 = 6.908$ (roughly), and $1,000 = \exp(6.908)$ (roughly).
- 6 Regarding the size of the earnings increase, $[\exp(0.045) - 1] \times 100 = 4.6$ percent, where 0.45 is the slope of the linear fit and reflects the change in log earnings associated with a 1 percentage point increase in the share that speaks English very well. Additionally, since the average annual earnings of US immigrants in 2023 was \$68,000 (see Table 2), $\$68,000 \times 0.046 = \$3,128$ (that is, 4.6 percent of \$68,000), rounded down to \$3,100.
- 7 When separate linear fits are estimated for New England states and other US states, the corresponding slopes are -0.11 and 0.51 , respectively. Accordingly, a 10 percentage point increase in the state-level proportion of immigrants who speak English very well is associated with a 1.1 percent decrease in their state-level average annual earnings in New England states ($[\exp(-0.011) - 1] \times 100 = -1.1$ percent) and a 5.2 percent increase in their state-level average annual earnings in other US states ($[\exp(0.051) - 1] \times 100 = 5.2$ percent).

Figure 3: English Proficiency by Age at Arrival in the United States

New England, 2000–2023



Source(s): 2000–2023 American Community Survey data and author’s calculations.

Note(s): The sample uses information on foreign-born persons who are at least 16 years old and meet restrictions for causal analysis, including arrival in the United States at age 17 or younger. The English proficiency ordinal measure takes on values from 0 to 3 (0 = does not speak English; 1 = speaks English, but not well; 2 = speaks English well; 3 = speaks English very well or speaks only English). The analysis controls for age, race/ethnicity, sex, and year indicators.

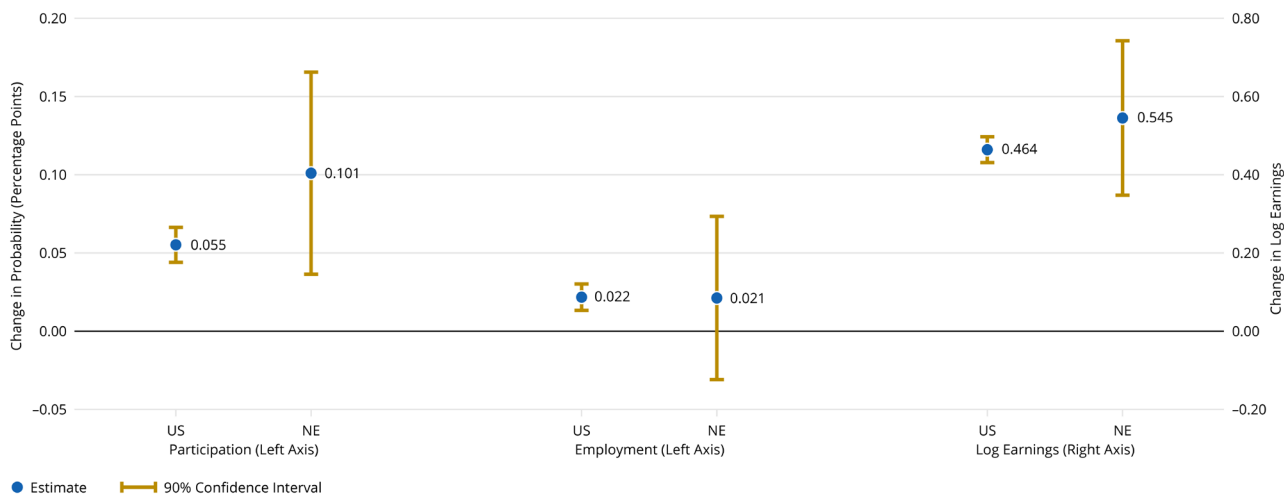
III. Impact of English Proficiency on Labor Market Outcomes

Having examined descriptive patterns to determine how the English proficiency of immigrants compares with their labor market outcomes, this report now considers causal analysis to assess how the English proficiency of immigrants directly affected their labor market outcomes during the 2000–2023 period. This analysis is conducted using the descriptive sample but with further restrictions imposed, as described in the “Data Source and Sample Creation” box on page 6. The key causal findings detailed in this section and the next section are that increased English proficiency of immigrants (1) increases their labor force participation and earnings in New England as well the United States and additionally increases their employment in the United States; (2) facilitates increased earnings in New England by educational attainment, occupation of employment, and industry of employment; and (3) leads to regional increases in earnings that become greater as educational attainment rises and smaller as age (a proxy for experience) falls.

There are at least two key reasons why descriptive analysis likely does not yield the causal impact of English proficiency on labor outcomes. The first is that immigrants choose their level of English proficiency. For example, immigrants with greater unobserved ability, which makes them more productive in the labor market, might also tend to attain high levels of English proficiency. If so, then descriptive analysis could overestimate the causal impact of English proficiency because an outcome such as

Figure 4: The Impact of English Proficiency on Labor Market Outcomes

New England and United States, 2000–2023



Source(s): 2000–2023 American Community Survey data and author’s calculations.

Note(s): The sample uses information on foreign-born persons who are at least 16 years old and meet restrictions for causal analysis, including arrival in the United States at age 17 or younger. For the employment outcome, the sample is further restricted to persons in the labor force, and for the log earnings outcome, the sample is further restricted to employed persons with positive, non-missing earnings. Results are based on regression analysis of observations at the individual level. Each estimate represents the impact of a one-unit increase in self-reported English proficiency (measured on an integer scale from 0 through 3) on the average change in the indicated labor market outcome for immigrants in the indicated area. The 90 percent confidence interval displays the set of values that one can be 90 percent confident includes the true estimate.

high earnings might result from an abundance of unobserved ability rather than from language skills. The second reason descriptive analysis likely does not correctly estimate the causal impact of proficiency on labor outcomes is that immigrants self-report their level of English proficiency in the ACS. Specifically, these survey data reflect a person’s subjective assessment of their English proficiency. That determination may imperfectly relate to an objective assessment of their English proficiency, thereby weakening the link between reported proficiency and favorable labor market outcomes and leading descriptive analysis to underestimate the causal impact.⁸

Given these analytical obstacles for descriptive analysis, this study instead uses a strategy created by Bleakley and Chin (2004, 2010) that leverages the psychobiological evidence of language acquisition being easier for young children. That evidence shows that native-like fluency is likely if a person is exposed to a language as a young child but less likely after a certain age, or “critical period.” The findings presented in Figure 3 support this point. The figure shows the English proficiency of New England immigrants by their age at arrival in the United States during the 2000–2023 period. It displays the results, when certain factors are held constant, for immigrants born in English-speaking countries and those born in non-English-speaking countries (using the country designations in Bleakley and Chin 2010). On average, immigrants born in English-speaking nations tend to speak English very well or speak only English regardless of when in their youth (age 17 or younger) they arrived in the United States. However, for immigrants

8 Given the opposing implications of immigrants choosing and self-reporting their level of English proficiency—namely, overestimation and underestimation of causal effects, respectively, when relying on descriptive analysis—the direction and size of their combined effect are uncertain.

born in non-English-speaking nations, proficiency decreases as the age of arrival increases.⁹ Figure 3 can also help explain the English proficiency differences between northern and southern New England shown in Figure 1: Immigrants in northern New England states are notably more likely to have been born in English-speaking countries or to have arrived in the United States before age 10.¹⁰ Thus, one can use a young arrival age from non-English-speaking countries versus English-speaking countries as a quasi-random increase in immigrant English proficiency to estimate the causal impact of such an increase on immigrant labor market outcomes.

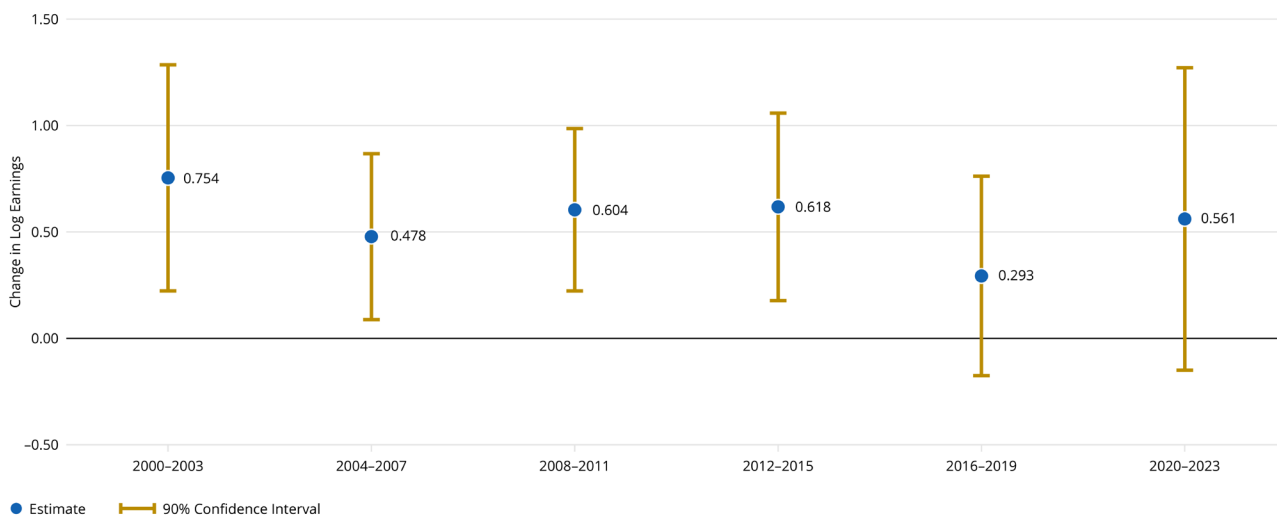
Figure 4 shows the results from using the aforementioned approach. It depicts the impact of an increase in immigrant English proficiency on the probability of participation in the labor force, the probability of employment, and log annual earnings, revealing generally positive effects.¹¹ Specifically, the figure indicates that at the individual level, a one-unit increase in English proficiency (for example, a change from “speaks English not well” to “speaks English well”) increases the probability of labor force participation in New England by 10.1 percentage points, or 12.9 percent ($10.1/78.5 \times 100 = 12.9$) and earnings in the region by 72.5 percent ($[\exp(0.545) - 1] \times 100 = 72.5$).¹² A one-unit increase in English proficiency also increases all three analyzed labor market outcomes in the United States, with an effect on earnings that is broadly comparable to the estimate by Bleakley and Chin (2004), who focus solely on the earnings outcome and use 1990 US census data.¹³ However, in New England, improving English proficiency does not have a statistically detectable effect on an immigrant’s probability of being employed.

Greater English proficiency increases earnings in New England by 72.5 percent.

- 9 In causal analysis, an arrival age of 9 years old or younger is considered the “critical period.” Results are robust to alternative age thresholds for this period.
- 10 Notably, in the causal sample, Vermont (89.9 percent, ranked second), Maine (88.5 percent, ranked third), and New Hampshire (77.1 percent, ranked fifth) ranked in the top five US states (including the District of Columbia) in 2023 for their share of foreign-born persons who were either born in an English-speaking country or arrived in the United States before age 10.
- 11 Estimation by two-stage least squares generally follows Bleakley and Chin (2004, 2010), with a function of age at arrival interacted with an indicator for a non-English-speaking birthplace as the instrument. However, differing from Bleakley and Chin (2004, 2010), this study controls for race/ethnicity rather than race and ethnicity separately and adds controls for the survey year because the analysis involves multiple years. Other controls included in the estimation capture effects due to the age at arrival, the country of birth, age, and gender. State of residence is not controlled for (nor is it controlled for in Bleakley and Chin 2004, 2010) to potentially account for state-level policies affecting both English proficiency and labor market outcomes, as one’s current US state need not reflect the location where proficiency was determined, especially for immigrants. Nevertheless, the results are robust to the inclusion of controls for state of residence and standard errors clustered by state.
- 12 The average (weighted) labor force participation rate for immigrants in New England aged 16 years or older who were born in non-English-speaking countries and arrived in the United States at age 10 or older is 78.5 percent.
- 13 For 1990, Bleakley and Chin (2004) find an earnings impact of $[\exp(0.334) - 1] \times 100 = 39.7$ percent, while for the 2000–2023 period, this report finds an earnings impact of $[\exp(0.464) - 1] \times 100 = 59.0$ percent. While these effects for the nation and region are large, the college wage premium can be comparably large, varying by age (Deming forthcoming). Thus, the focus of this study on immigrants, their observed characteristics, and impact mechanisms that are not limited to schooling (to be discussed later in the report) may all play a role in the large estimated effects.

Figure 5: The Impact of English Proficiency on Earnings, by Period

New England, 2000–2023



Source(s): 2000–2023 American Community Survey data and author’s calculations.

Note(s): The sample uses information on foreign-born persons who are at least 16 years old and meet restrictions for causal analysis, including arrival in the United States at age 17 or younger, in addition to being employed with positive, non-missing earnings. Results are based on regression analysis of observations at the individual level. Each estimate represents the impact of a one-unit increase in self-reported English proficiency (measured on an integer scale from 0 through 3) on the average change in log earnings for New England immigrants during the indicated period. The 90 percent confidence interval displays the set of values that one can be 90 percent confident includes the true estimate.

Given the smaller size of the regional sample compared with the national sample (the number of individuals in the New England sample represents only 4.8 percent of the number in the US sample) and the relatively reduced precision of the New England estimates as a result, the statistical equivalence of the US and New England labor market effects for each outcome cannot be ruled out. Additionally, corresponding analysis that does not use younger versus older age at arrival and English-speaking versus non-English-speaking country of birth to obtain plausibly causal estimates yields effects that tend to be relatively smaller.¹⁴ This finding suggests that in such descriptive analysis, any underestimation of causal effects due to immigrants self-reporting their level of English proficiency may dominate any overestimation of causal effects due to immigrants choosing their level of English proficiency.

The remainder of the causal analysis focuses on log earnings as the labor market outcome of interest for two reasons. First, in New England, the effect of increased English proficiency on the probability of employment for immigrants is not statistically distinguishable from zero. Second, the implications of a positive regional effect of greater English proficiency on the probability of labor force participation by immigrants are unclear without information about a person’s reason for being out of the labor force (for instance, retirement versus discouragement from job searching), and this information is not available in ACS data. Figure 5 therefore shows how the earnings

14 These ordinary least squares coefficients for the United States (US) and New England (NE) are as follows, in contrast to the two-stage least squares estimates depicted in Figure 4: 1) participation, 0.055 (US) and 0.074 (NE); 2) employment, 0.011 (US) and 0.009 (NE); 3) log earnings, 0.207 (US) and 0.214 (NE).

impact of English proficiency in New England varied over time across four-year periods from 2000 through 2023. The estimated effects of greater English proficiency on log earnings were positive in all periods, ranging from 34.0 percent (2016 through 2019) to 112.5 percent (2000 through 2003). However, the effect during the 2016–2019 period does not differ statistically from zero, while the ACS sample of housing units in the 2000–2003 period (and 2004) is roughly one-fourth the size of the samples in subsequent years following full survey implementation in 2005.¹⁵ The effect of increased

The effect of increased English proficiency on the probability of employment is not statistically distinguishable from zero.

English proficiency on earnings during the 2020–2023 period (75.2 percent) is also not statistically distinguishable from zero due to decreased estimate precision that likely stems from sampling issues in 2020 following the onset of the COVID-19 pandemic.¹⁶ For the remaining periods, the effect on earnings was relatively stable over time (61.3 percent for 2004 through 2007, 82.9 percent for 2008 through 2011, and 85.5 percent for 2012 through 2015).¹⁷

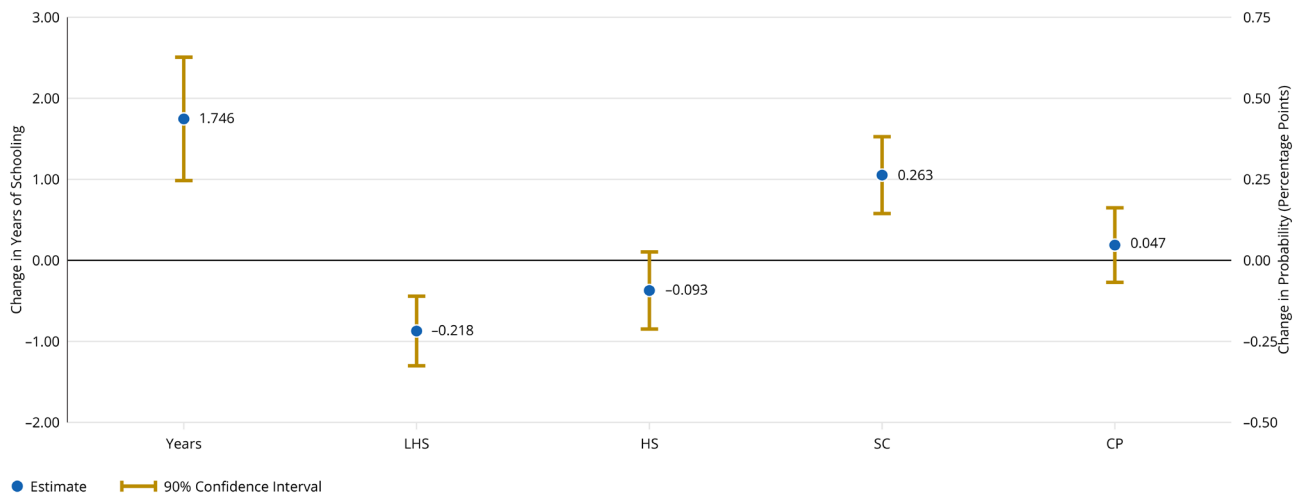
15 See “Sample Size” of the American Community Survey on the US Census Bureau website. Regarding effect size, for the 2016–2019 period, $[\exp(0.293) - 1] \times 100 = 34.0$ percent; and for the 2000–2003 period, $[\exp(0.754) - 1] \times 100 = 112.5$ percent.

16 See “2020 ACS 1-Year Experimental Data Release” on the US Census Bureau website. Regarding effect size, for the 2020–2023 period, $[\exp(0.561) - 1] \times 100 = 75.2$ percent.

17 Regarding effect size, for the 2004–2007 period, $[\exp(0.478) - 1] \times 100 = 61.3$ percent; for the 2008–2011 period, $[\exp(0.604) - 1] \times 100 = 82.9$ percent; and for the 2012–2015 period, $[\exp(0.618) - 1] \times 100 = 85.5$ percent.

Figure 6: The Impact of English Proficiency on Education

New England, 2000–2023



Source(s): 2000–2023 American Community Survey data and author’s calculations.
 Note(s): The sample uses information on foreign-born persons who are at least 16 years old and meet restrictions for causal analysis, including arrival in the United States at age 17 or younger, in addition to being employed with positive, non-missing earnings. Results based on regression analysis of observations at the individual level. Each estimate represents the impact of a one-unit increase in self-reported English proficiency (measured on an integer scale from 0 through 3) on the average change in the indicated education outcome for New England immigrants. “Years” is years of schooling, with the related change measured on the left axis. On the right axis, the change in probability (percentage points) is measured for educational attainment reflected by LHS, HS, SC, and CP, where LHS is less than high school (diploma or equivalent); HS is high school (diploma or equivalent); SC is some college (including associate degree); and CP is college (bachelor’s degree) or more.

IV. Mechanisms and the Differential Impact of English Proficiency on Earnings

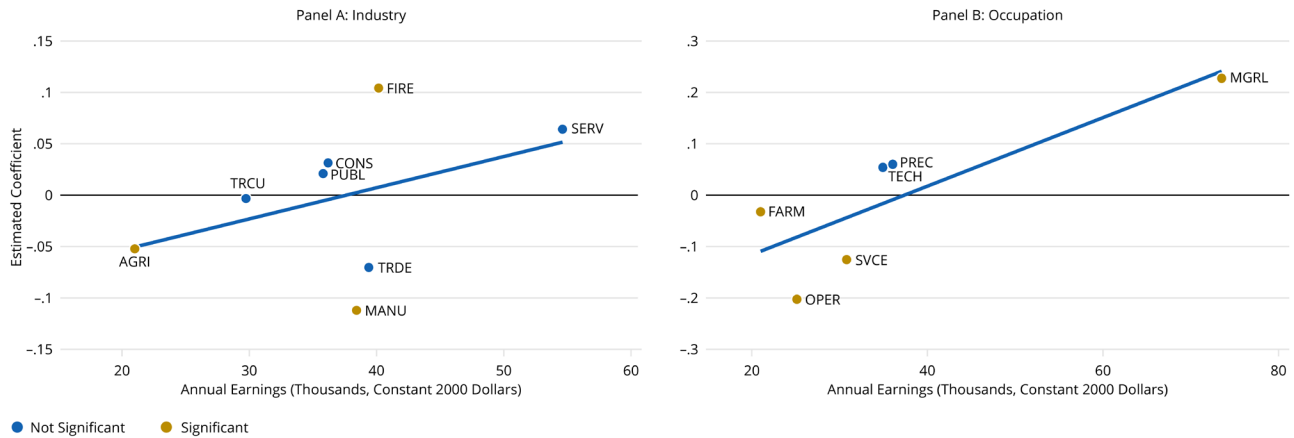
The large, positive impact of increased English proficiency on the earnings of immigrants in New England may reflect how language skills affect earnings-relevant characteristics of workers or jobs. Therefore, examining the impact of English proficiency on such characteristics may help identify the underlying mechanisms driving the earnings results and, in turn, guide the interpretation of those results as well as their policy implications.

A key earnings-relevant trait of workers is their educational attainment, as schooling may directly increase worker productivity, signal general ability, or proxy for other earnings-relevant traits. Figure 6 shows the effect of English proficiency on education. A one-unit increase in reported English proficiency increases schooling by 1.7 years, or 13.4 percent ($1.7/12.7 \times 100 = 13.4$).¹⁸ This increase in educational attainment primarily corresponds to a decrease in the probability of acquiring less than a high school diploma or equivalent (declines by 21.8 percentage points) and an increase in the probability of obtaining some college education, including an associate degree (increases by 26.3 percentage points). The effect of increased English proficiency on the probability of obtaining a high school diploma or equivalent does not differ statistically from zero, nor does the effect on the probability of acquiring a bachelor’s degree or more differ from zero.

18 The average (weighted) years of schooling is 12.7 for New England immigrants aged 16 years or older who were born in non-English-speaking countries and arrived in the United States at age 10 or older.

Figure 7: The Impact of English Proficiency on Industry and Occupation, by Baseline Earnings

New England, 2000–2023



Source(s): 2000–2023 American Community Survey data and author's calculations.

Note(s): The sample uses information on foreign-born persons who are at least 16 years old and meet restrictions for causal analysis, including arrival in the United States at age 17 or younger, in addition to being employed with positive, non-missing earnings. Results are based on regression analysis of observations at the individual level. Each estimate represents the impact of a one-unit increase in self-reported English proficiency (measured on an integer scale from 0 through 3) on the average change in the probability of being employed in the indicated broad industry (left panel) or broad occupation (right panel), for New England immigrants. Estimates are displayed as “significant” if the 90 percent confidence interval excludes 0, reflecting that one can be 90 percent confident the true estimate is not 0. For the industries, AGRI is agriculture, forestry, and fishing; CONS is construction; MANU is manufacturing; TRCU is transportation, communication, and other utilities; TRDE is wholesale and retail trade; FIRE is finance, insurance, and real estate; SERV is various services; and PUBL is public administration. For the occupations, MGRL is managerial and professional specialty; TECH is technical, sales, and administrative support; SVCE is service; FARM is farming, forestry, and fishing; PREC is precision production, craft, and repair; and OPER is operators, fabricators, and laborers.

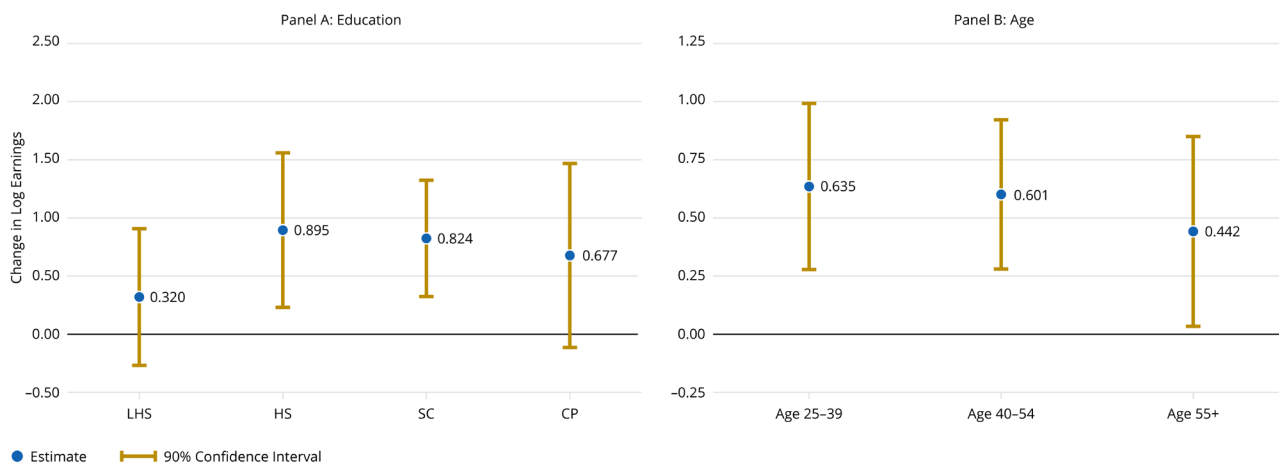
With respect to the characteristics of jobs rather than workers, the industry of employment and the occupation of employment are two important earnings-relevant traits. However, unlike with years of schooling and related indicators of educational attainment, there is no natural ordering of industry and occupation categories. Therefore, the two panels of Figure 7 plot the relationship between annual earnings in the baseline year of the causal sample (year 2000) and the estimated impact (coefficient) of an increase in English proficiency on employment in an industry or occupation, respectively. In both cases, there is a positive relationship between baseline earnings and all the estimated effects, with the effects reflecting the change in the probability of employment in an industry or occupation due to a one-unit increase in English proficiency.¹⁹ If baseline earnings increase by \$10,000, then the estimated effect size for the industry of employment increases by 3.0 percentage points, while the estimated effect size for the occupation of employment increases by 6.7 percentage points. If baseline earnings serve as a proxy for job quality, then these results suggest that greater English proficiency increases the probability that an immigrant in New England is employed in a higher-quality job (that is, a higher-earning job). Controlling for all three traits—education, industry, and occupation—in

Greater English proficiency increases the probability of obtaining some college education, including an associate degree.

19 There are also positive relationships in both cases (industry and occupation) between baseline earnings and the statistically significant coefficients rather than all coefficients (with “statistically significant” indicating that the 90 percent confidence interval excludes 0, reflecting that one can be 90 percent confident the true estimate is not 0).

Figure 8: The Differential Impact of English Proficiency on Earnings, by Education and Age

New England, 2000–2023



Source(s): 2000–2023 American Community Survey data and author’s calculations.
 Note(s): The sample uses information on foreign-born persons who are at least 16 years old and meet restrictions for causal analysis, including arrival in the United States at age 17 or younger, in addition to being employed with positive, non-missing earnings. Results are based on regression analysis of observations at the individual level. Each estimate represents the impact of a one-unit increase in self-reported English proficiency (measured on an integer scale from 0 through 3) on the average change in log earnings for New England immigrants with the indicated educational attainment (left panel) or age (right panel). LHS is less than high school (diploma or equivalent); HS is high school (diploma or equivalent); SC is some college (including associate degree); and CP is college (bachelor’s degree) or more. The 90 percent confidence interval displays the set of values that one can be 90 percent confident includes the true estimate.

addition to previous controls changes the effect of English proficiency on immigrant earnings in New England from a 72.5 percent increase to a 32.4 percent increase ($[\exp(0.281) - 1] \times 100 = 32.4$).²⁰ Thus, although these worker and job characteristics are important ways by which English proficiency affects immigrant earnings, the results indicate that there are other ways that language skills can affect earnings.

In addition to looking at effect mechanisms, this report examines differential effects of English proficiency on immigrant earnings in the region based on the selected worker and job traits. The study now also considers age as a worker trait that proxies for work experience.²¹ The two panels of Figure 8 display the differential effects for education and age. For education, attainment of a high school diploma (or equivalent) or some college education (including an associate degree) results in larger earnings effects compared with the impact when attainment is less than a high school diploma (or equivalent) and to a lesser extent, when attainment is a bachelor’s degree or more.²² For age, the earnings effects are larger for the younger age groups—namely, age 25 to 39 and age 40

20 By comparison, controlling for education, industry, and occupation, in addition to previous controls, similarly changes the effect of English proficiency on immigrant earnings in the United States from a 59.0 percent increase to a 24.2 percent increase ($[\exp(0.217) - 1] \times 100 = 24.2$).

21 Age is not explored in the analysis on effect mechanisms since it is a control measure in the main causal analysis.

22 Regarding effect size, less than a high school diploma (or equivalent) is $[\exp(0.320) - 1] \times 100 = 37.7$ percent; a high school diploma (or equivalent) is $[\exp(0.895) - 1] \times 100 = 144.7$ percent; some college education (including an associate degree) is $[\exp(0.824) - 1] \times 100 = 128.0$ percent; and a bachelor’s degree or more is $[\exp(0.677) - 1] \times 100 = 96.8$ percent.

to 54—than for the oldest age group, 55 and older.²³ These results suggest that English proficiency may be a complement to education (as educational attainment increases, the earnings effect increases) but a substitute for age, the proxy for experience (as age increases, the earnings effect decreases). The differential effects for industry and occupation that are statistically detectable are limited, and there is no clear pattern among those effects.

Regarding its effect on earnings, English proficiency may be a complement to education but a substitute for experience.

²³ Regarding effect size, age 25 to 39 is $[\exp(0.635) - 1] \times 100 = 88.7$ percent; age 40 to 54 is $[\exp(0.601) - 1] \times 100 = 82.4$ percent; and 55 and older is $[\exp(0.442) - 1] \times 100 = 55.6$ percent.

V. Implications for English Proficiency Programs in New England

Overview

A host of programs and initiatives across New England—some longstanding and others more recently established—are designed to boost English proficiency for immigrants or the broader population, and often for participants who include workers. This final section briefly describes some of these programs and policies and highlights findings from the report that may be relevant for them.

Discussion

In determining the level of English proficiency to acquire, New England immigrants face various expected costs and benefits that accrue solely to them. For instance, they may need to consider the monetary costs of participating in a class or program to learn English (including indirect expenditures such as transportation fees) as well as the non-monetary costs related to any dislike of the process. Regarding private benefits, they may need to account for improved labor market outcomes, as analyzed by this study, or other potential gains. Similarly, policymakers or employers pursuing policies that would help facilitate English proficiency for their constituents or employees face expected social costs and social benefits that accrue to the group, which may or may not be limited to immigrants. These social costs and benefits include group members' private costs and benefits and potential spillovers across group members.²⁴ They also include the social costs and benefits of implementing the group-level policies. These costs and benefits are both monetary, including payments to instructors and administrators, and non-monetary, including sentiments about instruction and administration. It is beyond the scope of this report to discuss costs, especially since the analysis focuses on benefits, particularly labor market private benefits. Therefore, this discussion about policy implications concentrates on such labor market benefits, implicitly holding costs fixed. However, because the ultimate social gains of any of these policies are determined by weighing both the costs and benefits to society, this report does not evaluate their effectiveness.

Some of the English-proficiency policies in New England are supported by descriptive evidence of a positive relationship in the region between immigrants' increased proficiency and higher earnings. Specifically, a study on Massachusetts indicates that, on average, a one-unit increase in English proficiency (measured using the same data that this report uses) is associated with a 24 percent increase in earnings (MassINC 2024).²⁵ The study's findings have helped spur English for speakers of other languages (ESOL)

24 For example, some benefits of increased English proficiency may accrue to another member of an immigrant's household who receives assistance navigating forms or processes in English.

25 This finding for Massachusetts aligns closely with the descriptive (ordinary least squares) analog of this report's finding for New England, which suggests a one-unit increase in English proficiency is associated with a 23.9 percent increase in earnings: $[\exp(0.214) - 1] \times 100 = 23.9$.

policy in the state. In June 2025, Massachusetts Governor Maura Healey signed the supplemental budget (funded by surplus revenue from the Fair Share surtax on taxable income over \$1 million), which includes \$10 million to help expand access to ESOL services.²⁶ In July 2025, the Eastern Bank Foundation announced that to help fill workforce gaps, it would commit \$10 million over the next three years to fund English-instruction programs in Massachusetts.²⁷ In Maine, a February 2025 bill that did not pass proposed an expansion of access to English language learner (ELL) services through a two-year pilot program. The program was intended to help mitigate indirect costs of using ELL services—such as those for childcare and transportation—and incentivize ELL instruction.²⁸ Given the perceived benefits and costs, supporters of these Massachusetts and Maine initiatives seek to expand English language instruction services. Thus, for a given set of private and social costs, the component of private and social benefits determined by this study—an earnings increase from greater English proficiency that is large and fairly stable over time, as shown in Figures 4 and 5—can help inform the ideal amount of English proficiency for individuals and society.

Other New England policies on English proficiency acknowledge and reflect differences in proficiency across areas within the states. For instance, a Rhode Island study notes that the growing share of multilingual learners among K–12 students is highly concentrated in a small number of school districts (RIPEC 2023). The study discusses differences across districts in state assessments of reading (and math) by multilingual learners, which is another metric that could be used to assess English proficiency. As Figure 1 and Table 1 illustrate, the share of immigrants who achieve native-like English proficiency varies within and across the New England states. The report’s estimated effect of English proficiency on immigrant earnings reflects an increase in proficiency, which is feasible only when immigrant proficiency is below the native-like level. Policymakers may wish to consider that the scope for increases in English proficiency—and therefore the effect on earnings—can differ from state to state and across areas within a state.²⁹ The availability of timely and accurate information on such area differences in English proficiency could enable more informed policy decisions.

26 Massachusetts Legislature Press Room: “Fact Sheet: Senate Fair Share Supplemental Budget for Education and Transportation”; and “Healey-Driscoll Administration Celebrates \$10 Million Investment in Workforce Training for English Learners,” Mass.gov press release, July 15, 2025.

27 See Jon Chesto, “Eastern Bank Foundation Commits \$10 Million to English-language Training for Immigrants,” *Boston Globe*, July 17, 2025.

28 Maine Legislative Document 471: “Resolve, to Establish a Pilot Program to Expand Intensive English Language Learner Programs.”

29 Further altering this consideration, it is also possible that there are nonlinear effects of English proficiency on labor market outcomes such as earnings. Such nonlinear effects correspond to an impact of English proficiency that differs in size based on the initial proficiency level (for instance, a one-unit increase from speaking English “[not] at all” to speaking English “not well” versus a one-unit increase from speaking English “not well” to speaking English “well”). Bleakley and Chin (2004) find suggestive evidence for the absence of such nonlinear effects. However, in auxiliary analysis not shown, this study finds some limited evidence of potential nonlinear effects, which may, if present, contribute to the large earnings impact that is estimated.

Select regional policies and programs also support access to education for English learners, including immigrants. Title III, Part A of the federal Elementary and Secondary Education Act of 1965 (which was further authorized and amended by the No Child Left Behind Act of 2001 and the Every Student Succeeds Act of 2015) provides funding to supplement (but not supplant) resources for “language instruction for English learners and immigrant students.”³⁰ In New Hampshire, for instance, the state Department of Education reserves 7 percent of its Title III allocation for an “Immigrant Children & Youth” subgrant to help ensure that eligible immigrant students meet state standards for grade levels and graduation.³¹ Vermont’s per-pupil school funding formula allows a differential weight for English learners under Act 127 of 2022, and under Act 73 of 2025, those weights will be adjusted in 2028 and 2029.³² In 2015, Connecticut’s State Board of Education adopted the Connecticut English Language Proficiency Standards, which highlight the language skills that English learners and multilingual learners need to succeed in school.³³ As Figures 6 and 8 show, access to schooling can help facilitate and amplify the impact of English proficiency on earnings. Therefore, policies that are informed by the link between proficiency and educational attainment may support the role that English proficiency plays in increasing earnings.

**Access to schooling
can help facilitate and
amplify the impact of
English proficiency
on earnings.**

These public policy examples illustrate some of this study’s implications for immigrant decisions regarding proficiency and related future policy in the region. First, individual-level decisions and group-level policies to achieve some level of English proficiency can be informed by an earnings effect of increased proficiency that is large and relatively stable over time. Second, the New England states and areas within the states differ in the typical English proficiency of their residents, thus suggesting differential scope across locations for increases in proficiency to affect earnings. Lastly, access to secondary and higher education can play a role in policy effectiveness because schooling facilitates and amplifies the impact of English proficiency on earnings.

30 “H.R.1 – No Child Left Behind Act of 2001,” and “S.1177 – Every Student Succeeds Act,” US Congress.

31 “Title III—Language Instruction for English Learners and Immigrant Students,” “Title III, Part A Program Overview,” and “Title III, Part A—Immigrant Children & Youth Subgrant,” New Hampshire Department of Education.

32 “Act No. 127—An Act Relating to Improving Student Equity by Adjusting the School Funding Formula and Providing Education Quality and Funding Oversight” and “Act No. 73—An Act Relating to Transforming Vermont’s Education Governance, Quality, and Finance Systems,” General Assembly of the State of Vermont. Also, “Weighted Student Funding Formula,” Vermont Agency of Education.

33 “English Learners/Multilingual Learners in Connecticut’s Public Schools: Guidelines for Administrators,” Connecticut State Department of Education.

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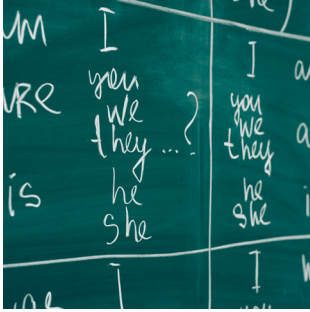
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Osborne Jackson is a principal economist with the New England Public Policy Center. Jackson’s research focuses on labor economics and urban and regional economics, with particular interest in immigration, discrimination, education, and crime. His work has covered topics such as the impact of immigration on native college enrollment and how discrimination might operate on the supply side of the labor market. Jackson has also given presentations at various academic meetings, including annual conferences of the American Economic Association and the Society of Labor Economists. Before joining the Federal Reserve Bank of Boston in 2015, he was an assistant professor of economics at Northeastern University. Jackson earned his AB in economics from Harvard University and his MA and PhD in economics from the University of Michigan.

Acknowledgments

The author thanks Jeffrey Thompson for his valuable comments and members of the Federal Reserve Bank of Boston Board of Directors as well as the New England Public Policy Center Advisory Board for their beneficial feedback. Nick Hall and Annie Liu provided excellent research assistance, and Larry Bean provided helpful edits.



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