Federal Reserve Bank of Boston

# Communities & Banking

Supporting the Economic Strength of Lower-Income Communities

fall 2016
volume 27, number 4

## The Importance of Teachers of Color

### Also **Inside**

Read *Communities & Banking* online at www.bostonfed.org/commdev

10 Perspectives on the Common Core

13 The Scratch Ticket and the Numbers Game

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29 Mobile Payments for Transit Riders

# Communities & Banking

*Communities & Banking* magazine aims to be the central forum for the sharing of information about low- and moderate-income issues in New England.



## LETTER FROM THE EDITOR

Welcome to the fall issue of *Communities & Banking*. In keeping with the season, we lead off with E. Chris Summerhill's article on the necessity of hiring and retaining teachers of color in school systems. A teacher in the Boston Public Schools, his article focuses on the diversity gap in that district, but the insights apply broadly. Antoniya Owens also writes on education, examining teachers' and administrators' reactions to the Common Core standards.

In an article on the high prevalence of young people receiving Social Security Disability Insurance benefits in northern New England, Joyce Manchester cites the opioid crisis as one factor. A related piece by Shannon Monnat provides an overview of the region's growing addiction epidemic. Rounding out coverage of some critical social issues, David Just and Gnel Gabrielyan take a nuanced look at unemployment and the popularity of lotteries in Maine, Robert Clifford and Osborne Jackson investigate the relationship between homelessness and subsidized housing, and Amy Higgins's map reveals the demographics of childhood food insecurity.

Three articles focus on development and innovation. Katie Grace, Robin Hacke, and Carmen Panacopoulos introduce the Capital & Collaboration project, a partnership between the Boston Fed and Harvard University's Initiative for Responsible Investment that is currently examining community investment in Working Cities in Massachusetts. Elisa Tavilla shows how commuting can be streamlined through mobile payments. And Sam Richardson describes a collaboration between Opportunity Finance Network (a nonprofit group of community development financial institutions) and Starbucks to create jobs.

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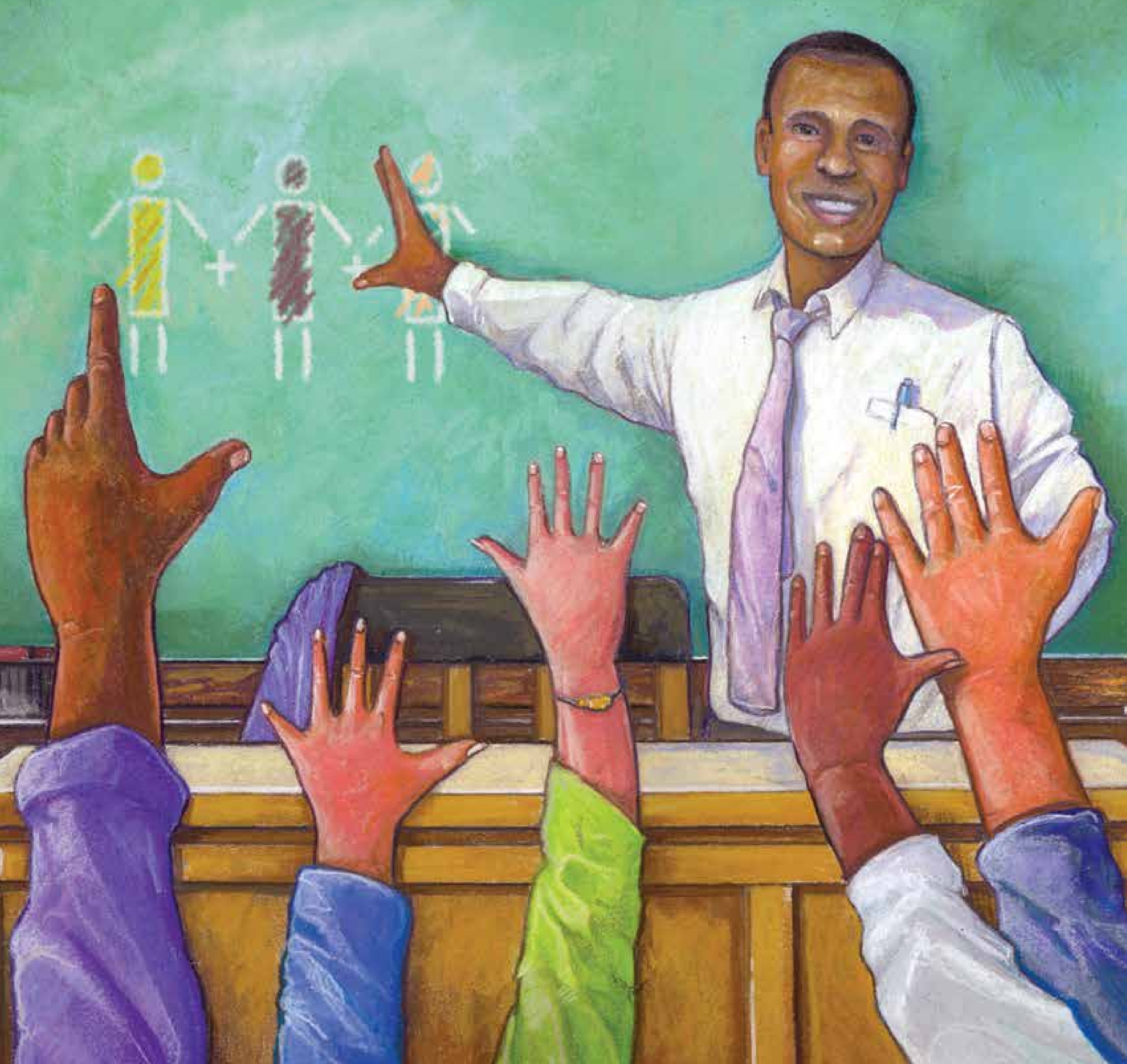
COVER STORY

# The Importance of Recruiting and Retaining Teachers of Color in All Schools

*E. Chris Summerhill*
BOSTON PUBLIC SCHOOLS

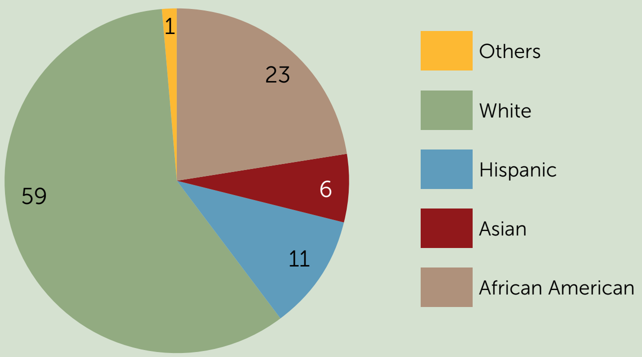


More than 40 years after the federally mandated desegregation of Boston Public Schools, the district is ramping up its efforts to diversify its teaching staff in an effort to meet the diverse needs of the students it serves.

Boston Public Schools (BPS) is the oldest public school district in the United States. The City of Boston, the Commonwealth of Massachusetts, and the surrounding New England states have led the way nationally in education since this country's inception. But Boston also has a long history of inequity in its many educational institutions. When federal district judge W. Arthur Garrity Jr. ordered busing to desegregate Boston's public schools, he stated that the school district "knowingly carried out a systematic program of segregation affecting all of the city's students, teachers, and facilities and … intentionally brought about and maintained a dual school system."[1] The 1974 *Morgan v. Hennigan* ruling sought not only to end the inequalities that students experienced due to segregated schools, but it also mandated that the district teaching corps diversify in order to match the racial makeup of the envisioned integrated school system. The following year, Garrity's ruling in *Morgan v. Kerrigan* provided guidelines for the recruitment and hiring of black teachers.[2] Ten years later, it was reinforced in *Morgan v. Nucci*.[3]

Judge Garrity's ruling required that at least 35 percent of teachers in BPS be persons of color (25 percent black teachers and the remaining 10 percent unspecified). At the time of his ruling, the largest minority in the City of Boston was African American. Boston steadily made gains in the hiring of black teachers and staff after Garrity's mandate, but the number of black teachers was not quite 23 percent in the 2011–2012 school year, and it dropped to 21 percent in 2014.[4] (See "Boston Public Schools: Teacher Race/Ethnicity 2011–2012.") Meanwhile, the student population in Boston Public Schools is currently only 14 percent white, whereas it is 41 percent Hispanic, 35 percent African American/Afro-Caribbean, and 9 percent Asian.[5] Despite Boston's efforts, the gap between the teacher demographic and the student demographic is still striking.

### Boston Public Schools: Teacher Race/Ethnicity 2011–2012




Source: Jeremy C. Fox, "Boston Struggles to Diversify Teaching Ranks," *Boston Globe*, August 24, 2015, with data from the Massachusetts Department of Elementary and Secondary Education and the National Center for Education Statistics.

## The Benefits of a Diverse Teaching Faculty

The push to recruit and hire more black teachers wasn't primarily about opportunity and access for the teachers. Nor was it only about bringing the proportion of black teachers in line with the percentage of black students in the school system. The push was about the idea that all students should have an opportunity to learn from educators of many diverse backgrounds.

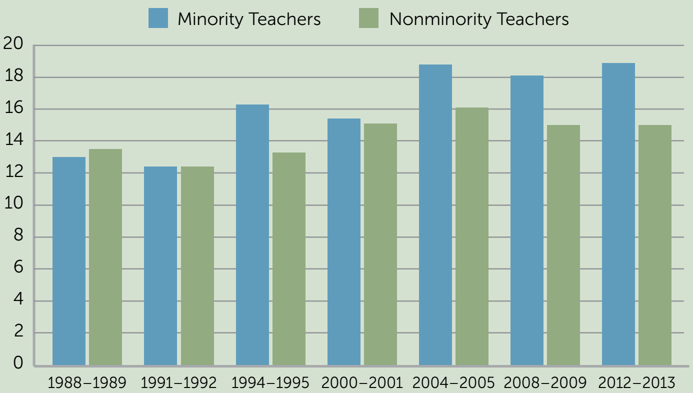
The recruitment and retention of a diverse teaching force isn't a problem unique to Boston. In September 2015, the Albert Shanker Institute released an extensive report on teacher diversity in the United States. "The State of Teacher Diversity in American Education" profiles nine urban districts, including Boston. It makes a compelling argument for why "teacher diversity is an educational civil right for students" and provides recommendations for addressing the lack of diversity in the American education system.[6] The report summarizes existing research on the benefits of teacher diversity:

- Minority teachers may have greater motivation to work with disadvantaged minority students in challenging school environments, which may reduce teacher attrition in those schools.
- Minority teachers tend to expect more from minority students than nonminority teachers, which benefits the students.[7]
- Minority students benefit from seeing people from their own racial and ethnic groups as successful role models and from the greater familiarity those teachers have with the students' background.
- Positive exposure to people of different races and ethnic groups helps reduce stereotypes and unconscious biases and helps with cross-cultural social bonding.
- Exposure to teachers from a variety of backgrounds is good preparation for encounters in the wider world.

The report also identified the current problems preventing a surge in minority teachers nationally. The biggest issue is not recruitment and hiring of minority teachers, but attrition. Nationally, minority teachers are leaving the profession at much higher rates than their nonminority peers. (See "Percentage of Teacher Turnover by Race and Ethnicity.")The report's authors investigated why the attrition rate was higher for minority teachers and reached the following conclusion:

> While students' race and ethnicity, poverty levels and school urbanicity are not factors in and of themselves, the same hard-to-staff, high-poverty urban schools that are more likely to employ minority teachers are also more likely to have less-desirable working conditions. And these less-desirable conditions, our data suggest, account for the higher rates of minority teacher turnover.[8]

### Percentage of Teacher Turnover by Race and Ethnicity




Source: Richard Ingersoll, "What Do the National Data Tell Us About Minority Teacher Shortages?" in "The State of Teacher Diversity in American Education."

## Boston's Diversity Efforts

Unlike 40 years ago, today Boston is making efforts to hire minority teachers not because of the federal mandate but because the district recognizes the value of having a truly diverse staff. Students in the system affirm the importance. Rachel Diaz, an eighth grader at the Tobin K–8 School in Roxbury, believes that the one teacher of color she had prior to this school year had a powerful impact on her. When speaking of him she noted, "[Mr. Donkor] cared about our education, and he would push us to do better because he wants us to be something in the future." Santiago Martinez, a junior at the English High School in Jamaica Plain, counted about nine educators of color during his time as a student. He shared his belief about their importance: "When I started to understand how our society is, I realized the importance of having [teachers of color], that if they can be successful adults, I have a chance at being anything I want to be."

The district has already begun implementing many of the recommendations of the report. It continues to aggressively recruit and retain high-quality teachers that match the diversity of its student body. There has also been a surge in the hiring of more diverse school leadership and district-level administrators.

My own experience as an educator speaks to these efforts. I am a graduate of BPS and Morehouse College, a historically black college, as well as the Boston Teacher Residency (BTR) Program. BTR's aim is to rigorously train diverse graduating classes of teachers to be career educators in the Boston Public School system. Its partnership with BPS aids in the district's goal to increase diversity. BTR maintains a minimum of 50 percent minority teachers in each of its class years. Its intensive practice-based model pairs teachers in training with veteran teachers in BPS. These veteran teachers serve as guides and mentors to aspiring teachers. They review and edit lesson plans and provide feedback on instruction, classroom management, and any number of other teaching responsibilities. BTR also tackles the attrition rate by requiring graduates to commit at least three years to the district. The BTR model has been and continues to be replicated in urban districts across the country.

I am also a Boston Public School Recruitment Fellow through the Office of Human Capital. We are a diverse cohort of teachers and guidance counselors who help the district with its recruitment efforts. We attend recruitment events, prescreen candidates, and conduct phone interviews on behalf of the district. Our work aims to recruit highly qualified diverse candidates. I am also a member of the planning team for ALANA (African, Latino/a, Asian, & Native American) Educators. Boston's ALANA program was created by Ceronne Daly, the director of Diversity Programs, through the Office of Human Capital. ALANA Educators are committed "to supporting the retention and promotion of a highly qualified workforce that reflects the racial, cultural, and linguistic diversity of our students."[9] We do that by hosting monthly gatherings for the purpose of networking and connecting educators with the resources that they need to stay and grow within BPS—for example, we provide support around teacher licensure.

Both the Office of Human Capital and ALANA Educators have moved the dial toward creating a more diverse workforce at BPS.[10] Twenty-five percent of the new teachers hired for the 2015–2016 school year were black. Apart from BTR, the district has created several channels that aim to increase that diversity even further by drawing promising teachers of color from Boston's own community.

It's worth noting that these efforts and initiatives would be equally worthwhile outside of an urban context, or a public-school context. Although the Shanker report studied urban school districts, the benefits of diversity that it highlighted are universal. Rural, suburban, private, parochial, and charter schools can all benefit from a workforce that accurately represents the diversity of our country. All students deserve and will benefit from a diverse educational experience that will prepare them for our diverse world.

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**E. Chris Summerhill** *is a history and social studies teacher in the Boston public school system and a recruitment fellow and ALANA Educators planning-team member. Contact him at e.c.summerhill@gmail.com.*

### Endnotes

1 Laura Crimaldi, "1974 Busing Decision Led to Strong Opinions, Reactions," *Boston Globe*, June 21, 2014.

2 The text of the 1975 ruling is available online at https://casetext.com/case/morgan-v-kerrigan-6.

3 See https://casetext.com/case/morgan-v-nucci-4.

4 Jeremy C. Fox, "Boston Struggles to Diversify Teaching Ranks," *Boston Globe*, August 24, 2015; James Vasnis, "Officials in Boston Seeking Black Teachers," *Boston Globe*, January 20, 2014.

5 Boston Public Schools Communications Office, "Boston Public Schools at a Glance, 2015–2016," November 9, 2015, http://www.bostonpublicschools.org/cms/lib07/MA01906464/Centricity/Domain/4/BPS%20at%20a%20Glance%2015-1109.pdf.

6 "The State of Teacher Diversity in American Education" (report, Albert Shanker Institute, Washington, DC, 2015).

7 The report cites Seth Gershenson, Stephen B. Holt, and Nicholas Papageorge, "Who Believes in Me: The Effect of Student-Teacher Demographic Match on Teacher Expectations," *Economics of Education Review*, March 11, 2016.

8 "The State of Teacher Diversity in American Education."

9 This is the ALANA Educators mission statement. For more on BPS's diversity efforts, see "Diversity in BPS," http://www.teachboston.org/diversity-in-bps/.

10 See "Human Capital Update" (report of Boston Public Schools to the School Committee, Boston, June 2015), http://s3.amazonaws.com/media.wbur.org/wordpress/1/files/2015/09/0914_school-committee-doc.pdf.

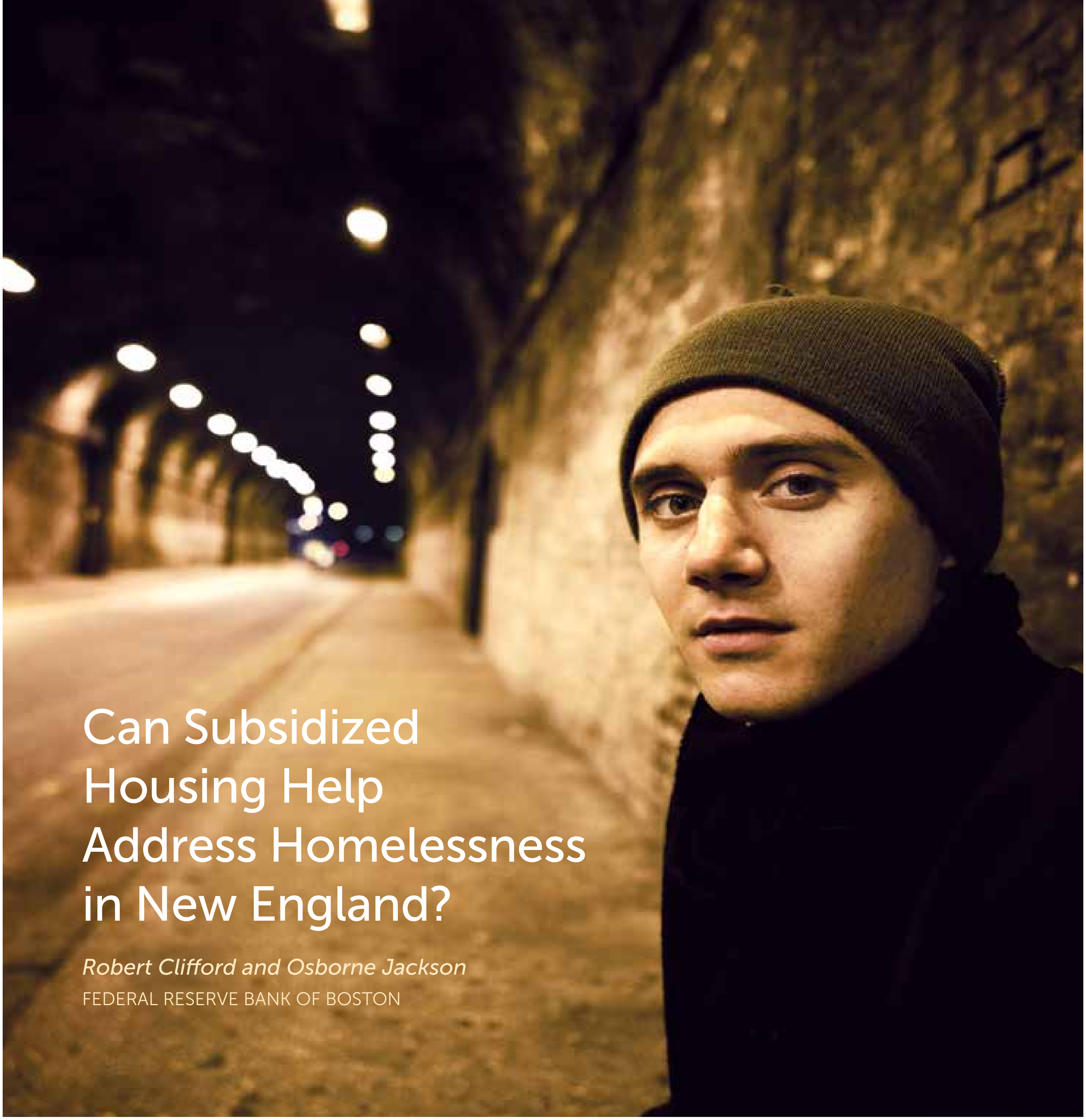


photo Chris Schmidt/iStock

# Can Subsidized Housing Help Address Homelessness in New England?

*Robert Clifford and Osborne Jackson*
FEDERAL RESERVE BANK OF BOSTON

The relationship between subsidized housing and homelessness is hard to measure, but our research indicates that low-cost housing is likely to bring down homeless rates.

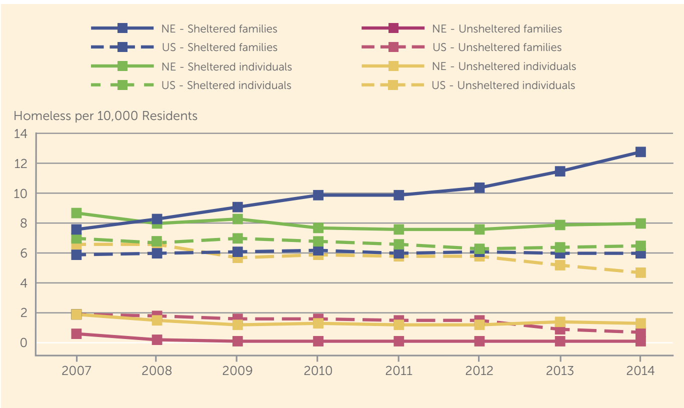
Federal and state governments spend considerable sums on housing programs for the poor. Programs that offer subsidized housing to mitigate homelessness have attracted increased interest in the wake of the foreclosure crisis that began in 2007 and extended well beyond the Great Recession of 2008–2009. However, whether subsidized housing is effective at combating homelessness remains an unresolved question.

## Homelessness in New England

On a single night in January 2014, nearly 580,000 people were homeless in the United States, with 32,500 of them residing in New England.[1] Since 2007, trends in homelessness in New England have diverged from those in the nation overall, with national homeless counts on the decline but regional counts on the rise.

When normalized to population to create a rate of homelessness (the number of homeless per 10,000 residents), we see that the rise in measured homelessness in New England has been driven exclusively by a surge in homeless families in shelters and transitional housing, rather than increases in homelessness among unsheltered families or among individuals. (See "Homelessness Rates by Family and Sheltered Status, 2007–2014.") In contrast, sheltered family homelessness has been flat for the United States as a whole, and the decline in national homelessness largely reflects falling rates among unsheltered families and individuals. (People are considered unsheltered if they are living on the street or in cars or tents, etc.)

### Homelessness Rates by Family and Sheltered Status, 2007–2014




Source: US Census Bureau, population estimates.

The increase in the rate of sheltered family homelessness in New England is driven by the large increases in this measure in Massachusetts and Vermont. In turn, it's possible that the increases in sheltered family homelessness in these two states reflect an interaction between nationwide market forces pushing more families out of their homes, such as rising rents and/or declining incomes, or policies in both states that guarantee access to shelter for homeless families. In both Massachusetts and Vermont, families are offered access to shelter even when traditional shelter beds are not available: hotels and motels are used for this purpose.[2] In areas without such flexible shelter policies, if shelters fill to capacity, anyone who finds themselves homeless will likely either fall into the category of unsheltered homelessness or will find temporary accommodation (e.g., doubled up) with friends or family. Those who are unsheltered should be accounted for as such in homeless measures, but it is rare for families—as opposed to individuals—to be found in unsheltered situations. Homeless families are more likely to double up with friends or family, and if they do, they will not be recorded in homeless counts. Therefore, similar increases in family homelessness across states might nonetheless boost official homeless counts more in Massachusetts and Vermont than in states without similar shelter guarantees.

Unfortunately, it is difficult to observe changes in doubled-up populations in data sources, and the evidence remains inconclusive about this explanation.[3] Other potential explanations include unique market forces in states with rising rates of family homelessness and methodological issues with counting the unsheltered populations. However, these hypotheses cannot be easily studied with the limited data currently available on homeless populations.

## A Role for Subsidized Housing?

Legislation passed by the US Congress in 2009 amending the definition of homelessness included this statement: "A lack of affordable housing and limited scale of housing assistance programs are the primary causes of homelessness."[4] Nevertheless, the role of subsidized housing in reducing homelessness is extremely difficult to measure. This is because subsidized housing is not randomly placed across areas, making it challenging to determine the impact of such housing on homelessness, separate from related factors such as neighborhood poverty or unemployment.

To overcome this hurdle, we concentrate on one source of subsidized housing: the Low-Income Housing Tax Credit (LIHTC). LIHTC, created in 1986, allocates tax credits to state housing agencies, which then distribute them to developers through a competitive process. The tax credits provide a dollar-for-dollar reduction in tax liabilities over 10 years.[5]

An advantage of focusing on LIHTC is that, under the program, projects that are placed in low-income areas designated as "qualified census tracts" (QCTs) are awarded 30 percent more credits than those in other areas.[6] As a result of this rule, very similar tracts may receive different amounts of tax benefits for LIHTC-funded projects due to differences in QCT eligibility. This creates a quasi-experiment in housing placements when comparing moderately poor neighborhoods just above and below the QCT eligibility cutoff. For these similarly poor tracts, observed differences in LIHTC housing are assumed to be quasi-random, due to eligibility differences.[7]

## Impact of Subsidized Housing on Local Homelessness

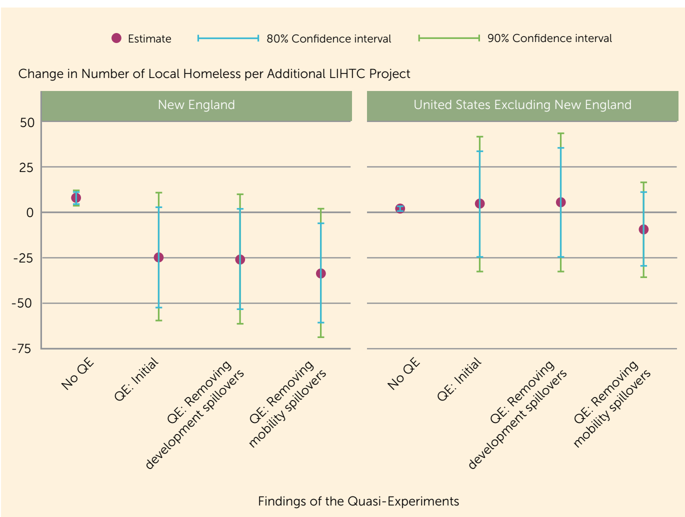
Upon confirming that LIHTC leads developers to create subsidized housing, we examined the impact of such housing on local homelessness.[8] In the figure "Impact of LIHTC on Homelessness in the Average Neighborhood Estimated Under Various Scenarios," the confidence intervals around the estimates given in the graph indicate the precision of each estimate and the range of possible "true" values associated with a given degree of certainty.[9] When we did not use QCT eligibility to create a quasi-random experiment, we observed a counterintuitive, significantly positive relationship between LIHTC activity and homeless counts. That is, homeless counts were higher where the availability of low-cost housing was greater. This positive relationship may be due to factors that make neighborhoods attractive to both developers and the homeless (for example, access to public transportation), or alternatively could result from developers preferring areas with higher rates of homelessness.

photo damicudic/iStock

People are considered unsheltered if they are living on the street.

Once we introduced QCT eligibility to create a quasi-experiment, initial plots showed LIHTC development was no longer associated with increases in homelessness in New England. Rather, we found that an additional project reduces the homeless count by 24.9 individuals in New England and raises it by 4.4 individuals outside of New England. While neither estimate differs significantly from zero, the range of potential true effects in each case contains many negative values—that is, many values indicating decreases in homelessness. In fact, in New England, the majority of these potential true effects are negative. This suggests that, although we cannot rule out a zero effect with 90 or even 80 percent certainty, we can nevertheless infer that the true effect is much more likely to reduce homelessness than to have no effect or increase it.

## Impact of LIHTC on Homelessness in the Average Neighborhood Estimated Under Various Scenarios




Source: US Department of Housing and Urban Development LIHTC data and QCT eligibility data, US Census data, and authors' calculations. Note: For the average tract, each estimate represents the change in the local homeless count in 2000 associated with a one-project increase in 1994–1999 LIHTC development.

LIHTC development might result in side effects or "spillovers" across nearby tracts that diminish the estimated effect of local LIHTC activity on neighborhood homelessness. For example, additional low-income housing construction in a given tract might lower the amount of LIHTC housing developments in nearby tracts (i.e., supply-side or development spillovers), and/or LIHTC development in a neighborhood could attract homeless populations from neighboring tracts who come in search of low-income housing (i.e., demand-side or mobility spillovers). Regardless of region, we find that adjusting for development spillovers has little impact on the results, although within New England, LIHTC projects are now estimated to reduce the homeless count by slightly more than in the initial quasi-experiment. In contrast, when accounting for mobility spillovers, we find that LIHTC activity leads to a decrease in local homelessness, regardless of region. Specifically, an additional LIHTC project now causes reductions of 33.4 and 9.4 homeless individuals in and outside of New England, respectively. Moreover, in both regions, the majority of the potential true effects are negative, particularly in New England, where we can now rule out the no-effect outcome with 80 percent certainty.

## Conclusion

Homelessness is on the rise in New England, driven by an increase in family homelessness. Developers do tend to generate low-income housing when offered incentives to do so. Our quasi-randomized experiments revealed that when mobility-related spillovers across neighborhoods are taken into account, the majority of the evidence suggests that local increases in subsidized housing are likely to reduce neighborhood homelessness, particularly in New England. Our results suggest that on average, an additional LIHTC project could potentially eliminate the majority of local homelessness.

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**Robert Clifford** *is a senior policy analyst in the Supervision, Regulation & Credit department and* **Osborne Jackson** *is an economist in the New England Public Policy Center, both at the Federal Reserve Bank of Boston.*

### Acknowledgment

This article is a summary of findings from Robert Clifford and Osborne Jackson, "Can Subsidized Housing Help Address Homelessness in New England?" (New England Public Policy Center Research Report No. 15-3, Federal Reserve Bank of Boston, 2015), www.bostonfed.org/economic/neppc/researchreports/2015/rr1503.htm.

### Endnotes

1 Meghan Henry et al., "The 2014 Annual Homeless Assessment Report to Congress: Part 1 Point-in-Time Estimates of Homelessness" (report, US Department of Housing and Urban Development, Washington, DC, 2014), https://www.hudexchange.info/resources/documents/2014-AHAR-Part1.pdf.

2 These policies are not unique to the region: New York City and Washington, DC, for example, have similar programs in place.

3 Using the US Census Bureau's American Community Survey (ACS), we find no recent increases in the doubled-up population in states without flexible policies on shelter availability.

4 See the Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH) Act of 2009, p. 33, section 1003(A).

5 The amount of credits a project receives is determined by applying the appropriate credit rate to the "qualified basis," equal to the eligible project costs multiplied by the share of units to be rent restricted and occupied by low-income residents.

6 A tract where at least 50 percent of households have incomes below 60 percent of the area median income is eligible to be deemed a QCT, due to the Omnibus Reconciliation Act of 1989. See Michael Hollar and Kurt Usowski, "Low-Income Housing Tax Credit Qualified Census Tracts," *Cityscape: A Journal of Policy Development and Research* 9, no. 3 (2007): 153–60.

7 A quasi-experiment has a framework similar to that of a traditional experiment but lacks random assignment to treatment and control groups. In place of purely random assignment, a quasi-experiment relies on other important restrictions or assumptions to achieve something that is like random assignment when those restrictions or assumptions are present.

8 In New England, we estimate that the stock of subsidized housing is increased largely through the rehabilitation of extant buildings, while outside of New England, subsidized housing is increased mainly through new construction.

9 For instance, the 90-percent confidence interval conveys that we can be 90 percent certain that the "true" effect lies within the displayed range of values.

# Educators' Perspectives on Common Core Implementation in Five States

*Antoniya Owens*

**photo** OJO-images/istock

The Common Core has provoked passionate debate, but a five-state survey found that teachers have been largely supportive and are adjusting their instruction.

The Common Core State Standards (CCSS)—or simply, the Common Core—consist of a set of benchmarks for what students in elementary and secondary schools should master in mathematics and English language arts (ELA) at each grade level. Since their release in 2010, the standards have been adopted in more than 40 states, including all of New England. And almost since the beginning, the standards—and the new assessments developed to test student knowledge of them—have provoked heated debate. Conservative lawmakers have argued that the standards constitute federal overreach into local policy matters. Some teachers' unions and parent organizations have protested the burdens that standardized testing imposes on students and teachers.

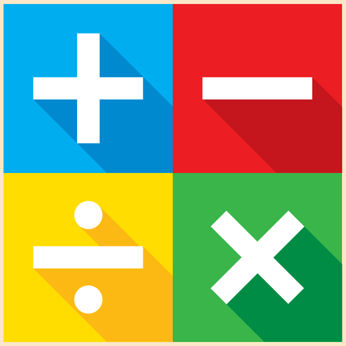
For most states, the Common Core constituted a considerable departure from the previous generation of standards. The mathematics standards, for example, required changes in the timing, depth, and frequency with which topics are addressed across grades. For instance, students now begin multiplication of fractions in fourth grade and are expected to be fluent by the end of fifth grade—a grade level earlier than before in most states. More than any other education initiative in recent history, the Common Core has required teachers to change their instructional focus, practices, and curricular materials. Education leaders have had to grapple with challenges like developing curricula aligned with the new standards and bridging gaps in teachers' content knowledge in a relatively short amount of time.

To learn more about how educators were implementing the Common Core, in the spring of 2015 the Center for Education Policy Research at Harvard University surveyed principals and mathematics and ELA teachers in 151 elementary and middle schools across five states (Delaware, Maryland, Massachusetts, New Mexico, and Nevada). The sample was designed to be representative of public schools in each of the five states. We solicited educators' views on the standards, the training, and the supports they received in adjusting their teaching and curricular materials, among other topics. Overall, 1,498 teachers and 142 principals completed the surveys, equivalent to response rates of 86 percent for teachers and 93 percent for principals.

We also studied whether teachers' exposure to strategies and supports designed to facilitate implementation of the Common Core was related to better student performance on the new CCSS-based assessments (Partnership for Assessment of Readiness for College and Careers, or PARCC, and Smarter Balanced), after accounting for numerous student, school, and teacher characteristics. This article summarizes key findings from this research.[1]

## What Teachers and Principals Reported

Educators' support is instrumental to the success of any education initiative. If teachers are unconvinced of the standards' potential to improve students' performance, they may be less inclined to invest time and effort in overhauling their instruction. The surveys revealed that teachers and principals in the five states have largely embraced the Common Core standards and believe that their schools are effectively implementing them. Almost three quarters of teachers (73 percent) reported that teachers in their school have embraced the CCSS "quite a bit" or "fully"; about 90 percent said the same of their principal and district administrators. (See "Teacher and Administrator Support for CCSS.") In a separate question, 69 percent of principals agreed the CCSS "will have a positive effect on student learning in the long run." Moreover, more than eight out of 10 teachers agreed that their colleagues (81 percent) and their principal (83 percent) were implementing the standards effectively; about three quarters (73 percent) reported the same for their district leaders.



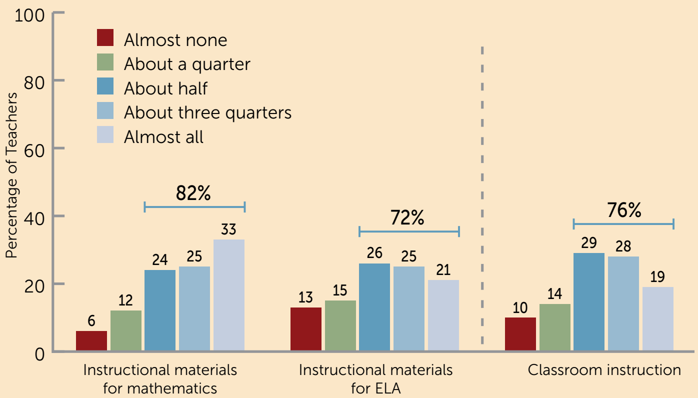
Teachers also shared that they have made major changes to their instruction and materials to adjust them to the Common Core. Eighty-two percent of mathematics teachers and 72 percent of ELA teachers reported having changed at least half of their instructional materials as a result of the CCSS. Three quarters of teachers (76 percent) also reported having changed at least half of their classroom instruction. (See "Changes in Instruction and Materials.") When asked about specific instructional shifts emphasized by the Common Core, the vast majority (81 percent) of mathematics teachers reported an increased emphasis on students' conceptual understanding of mathematics; 78 percent increased the time students spend on real-world application of mathematical knowledge. Among ELA teachers, 86 percent reported having increased the amount of assigned writing that prompts students to support their views with evidence. Similarly, 85 percent of ELA teachers reported increased use of nonfiction texts in students' reading assignments.

Given the vast changes in instructional practices and materials necessitated by the Common Core, it is not surprising that educators reported receiving substantial training on several CCSS-related topics, such as developing aligned materials or mastering new pedagogic techniques. In the early spring of 2015, teachers and principals reported having spent on average 3.8 days and 4.5 days, respectively, in formal professional development on the Common Core so far that year. The average teacher and principal also reported spending 4.5 days and 5.3 days, respectively, in CCSS-focused professional development the previous school year (2013–2014). More than half of all teachers reported that staff from their own schools were the primary providers of Common Core professional development.

While important, formal professional development alone may not be sufficient to prepare teachers. Observing teachers apply CCSS-consistent instructional techniques in the classroom, providing them with feedback, and helping them troubleshoot reinforces lessons learned in formal training. While the vast majority of teachers (89 percent) were observed in the classroom at least once in 2014–2015, less than half (47 percent) reported receiving explicit feedback afterward on how well their instruction matched Common Core expectations. And only 44 percent reported that they could identify specific instructional changes they made as a result of that feedback.

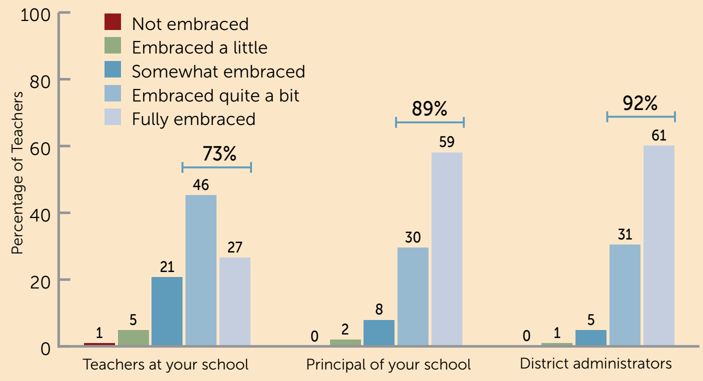
Finally, in many states nationwide, the evaluation of teachers incorporates measures of students' achievement. If these measures were tied to the Common Core, it could potentially give teachers added incentives to adjust their practices and materials. To shed more light, we asked teachers whether their students' performance on PARCC, Smarter Balanced, or other CCSS-aligned assessments played a role in their formal performance evaluation in 2014–2015. Half of all teachers reported that it did. This share was particularly high—at 87 percent—in New Mexico, the only state in the study in which students' 2014–2015 PARCC test scores factored into teachers' performance evaluations. (In the remaining states, the

### Changes in Instruction and Materials




Teachers were asked, "Generally speaking, as a result of the CCSS, what percentage of your instructional materials in each subject has changed? How much of your classroom instruction has changed?"

### Teacher and Administrator Support for CCSS




Teachers were asked, "To what extent would you say that the following individuals have embraced the CCSS?"

CCSS-aligned student outcomes came from interim assessments, district assessments, or student learning objectives.)

## What Has Worked?

A novel feature of our study design is our ability to link teachers' survey responses to their students' test scores on the 2014–2015 PARCC and Smarter Balanced assessments, as well as to state data on students', teachers', and schools' characteristics and students' prior academic performance. This enables us to observe whether a teacher's exposure to a Common Core support was associated with better performance among her students, compared with the performance of students whose teachers did not receive such support, while controlling for a large array of factors that also affect student performance.

In mathematics, we identified three promising CCSS implementation strategies: more professional development days, more classroom observations followed by feedback tied to the Common Core, and the inclusion of Common Core–aligned student outcomes in teacher evaluations. All three strategies were associated with higher student achievement on the PARCC and Smarter Balanced assessments in mathematics, controlling for students' demographic characteristics, teacher and school factors, and students' prior performance on non-CCSS assessments.

In ELA, we were unable to point to any strategies that correlated with students' performance. However, our results suggest that the new English assessments are more sensitive to instructional differences between teachers than the old ELA assessments, especially in middle school. This appears to be due to the fact that the new assessments place greater weight on student writing. While prior research on the old assessments deemed mathematics tests more sensitive than ELA tests to differences between teachers, the new CCSS-aligned English assessments appear nearly as sensitive as the new mathematics assessments. This finding has important implications for practice. If the new ELA tests do identify teachers who are more successful at developing student writing, school districts will be better able to reward and retain those teachers. Districts will also be able to measure the impacts of professional development and other supports that help teachers improve students' writing skills, thereby informing better and more cost-effective programming choices.

* * *

Over the past few years, while the battle over the Common Core has raged, teachers have quietly retooled their practices, lesson plans, and materials to meet the new standards. The findings in this research provide a starting point for locating effective ways of supporting teachers in implementing the Common Core and lay a foundation for future research that digs deeper into what works and what doesn't.

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### Acknowledgment

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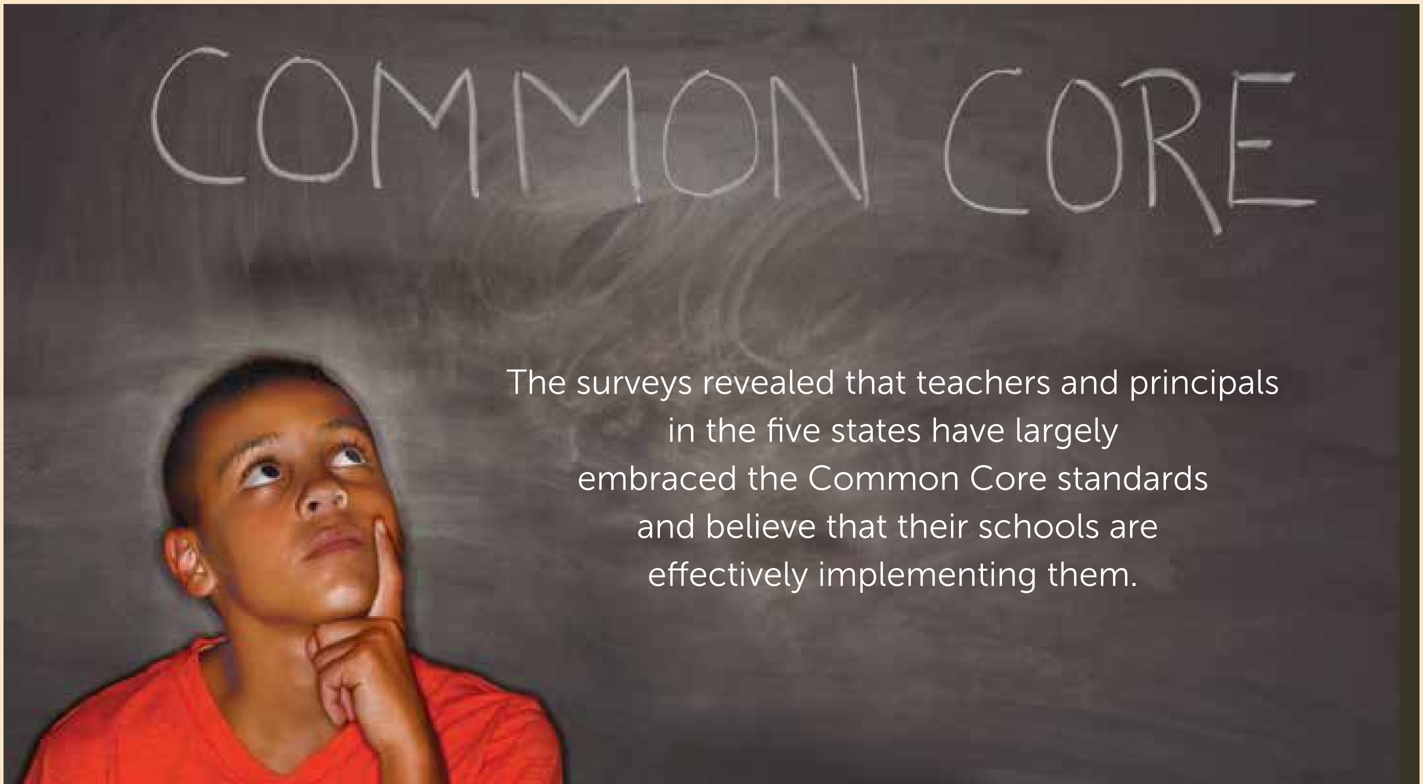
### Endnotes

1 T.J. Kane, A.M. Owens, W.H. Marinell, D.R.C. Thal, and D.O. Staiger, "Teaching Higher: Educators' Perspectives on Common Core Implementation" (Report, Center for Education Policy at Harvard University, Cambridge, MA, 2016), http://cepr.harvard.edu/files/cepr/files/teaching-higher-report.pdf.



# The Scratch Ticket and the Numbers Game: Who Plays Which and Why?

*David Just and Gnel Gabrielyan*
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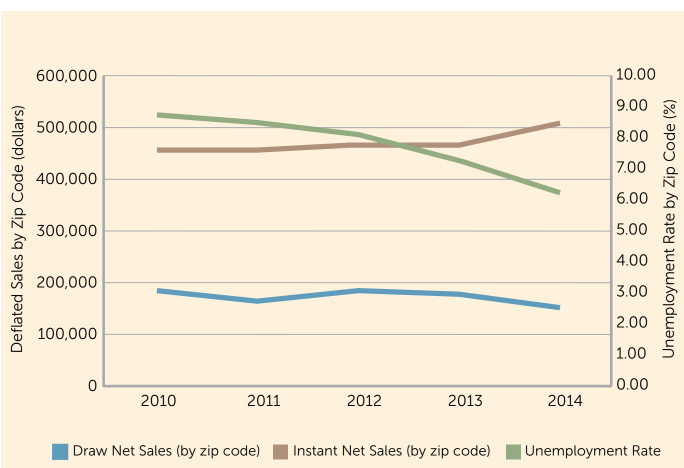
> Research in Maine shows that draw lotteries and instant-play lotteries attract different demographics, although they both affect the most economically vulnerable.

Currently, 44 states offer consumers the opportunity to play the lottery.[1] Lotteries are often touted as a simple way to raise funds without increasing taxes. In the most recent economic downturn, some states—notably Maryland—made the lottery an integral part of their plans to avoid budget cuts. Because those who play the lottery do so voluntarily with the hope of obtaining a big payout, at first blush it is hard to point to obvious losers in this revenue-generating scheme. Even those who do not win can claim some form of cheap entertainment that perhaps justifies the expense.

Lotteries have grown significantly since their introduction in 1964 by New Hampshire.[2] More than $70 billion was spent on lottery tickets and games in the United States in 2014,[3] which averages out to around $300 per year per adult. However, the growing literature on what drives lottery play indicates that much of the impetus appears to be financial desperation on the part of participants rather than entertainment seeking.[4]

The Maine State Lottery was enacted in 1974 in a statewide referendum.[5] Neighboring states had already adopted some type of lottery, and the thought in Maine was that if the state introduced its own, it could capture some of the revenue leaving the state.[6] Lotteries are often sold to the public by connecting the revenue with sympathetic causes, such as education. This is not the case in Maine, however, where state lottery revenue becomes part of the general budget. In recent years interstate competition in lottery sales has become less of an issue as most states offer lotteries. This has led to the introduction of multistate lotteries with larger jackpots and wider publicity. Maine joined the multistate Powerball in 2004, the Hot Lotto in 2009, the Mega Millions in 2010, and the Lucky for Life in 2012. All of these are multijurisdictional jackpot games controlled by the Multi-State Lottery Association (MUSL).[7] MUSL is a nonprofit, government benefit association that is owned and operated by its member lotteries.

### Average Lottery Sales and Unemployment Rate by Zip Code in Maine (adjusted 2010 dollars)




Note: The unemployment rate is the percentage of people who are jobless and are actively looking for work. Source: Lottery sales information was obtained from the State of Maine through a Freedom of Access Act request. Unemployment figures are from the US Bureau of Labor Statistics.

## Not All Lotteries Are Equal

There are two main types of lottery games: draw and instant. Draw lotteries involve the purchase of a ticket possessing a set of numbers (either random or selected by the participant) that provide an opportunity to win huge jackpots reaching into the hundreds of millions of dollars. For example, in January 2016, the Powerball jackpot reached a whopping $1.6 billion. These jackpots are widely advertised; their size depends on the number of winners from prior rounds and their take. Game structure and jackpot size are two of the biggest factors affecting lotteries' profitability. Researchers argue that the jackpot size has a bigger impact on lottery sales than likely expected winnings, suggesting an irrational "lotto mania" behavior on the part of consumers. The above-mentioned Powerball game, with the highest jackpot to date as of this writing, had a winning probability of one in 292.2 million (the overall odds of winning a prize in a Powerball game are one in 24.87[8]), yet had a record number of participants.[9]

Instant lotteries provide an opportunity for an immediate payout at the time of purchase: having purchased a ticket, customers scratch an obscuring coating off boxes on the card to reveal whether or not they have won anything (winning requires all the revealed boxes to match). Instant games tend to offer much smaller winnings, although on rare occasions players can win close to $2 million.[10]

## Who Plays the Lottery and Why It Matters

People with low socioeconomic status are more likely to play the lottery than those who are better off. Lower-income households and individuals spend a larger share of their income on purchases of lottery tickets than do those with higher incomes.[11] This by itself is not particularly damning if it merely indicates that lotteries are a cheap form of entertainment. However, this does not appear to be the case. Some have found that simply feeling poor increases the likelihood of purchasing lottery tickets, regardless of actual income level.[12] Moreover, lottery ticket sales do not appear to substitute for attendance at movie theaters or other cheap forms of entertainment.[13] Behavioral theories of financial risk taking suggest that individuals are more prone to take risks when they have experienced recent negative financial shocks. As they fall below their reference income level, they are more willing to risk further losses—for example, by playing the lottery—in order to return to their former status. One such negative wealth shock is loss of employment, which leaves an individual without a constant source of income. Therefore we might expect that as the unemployment rate goes up, lottery sales will too.

## The Case of Maine

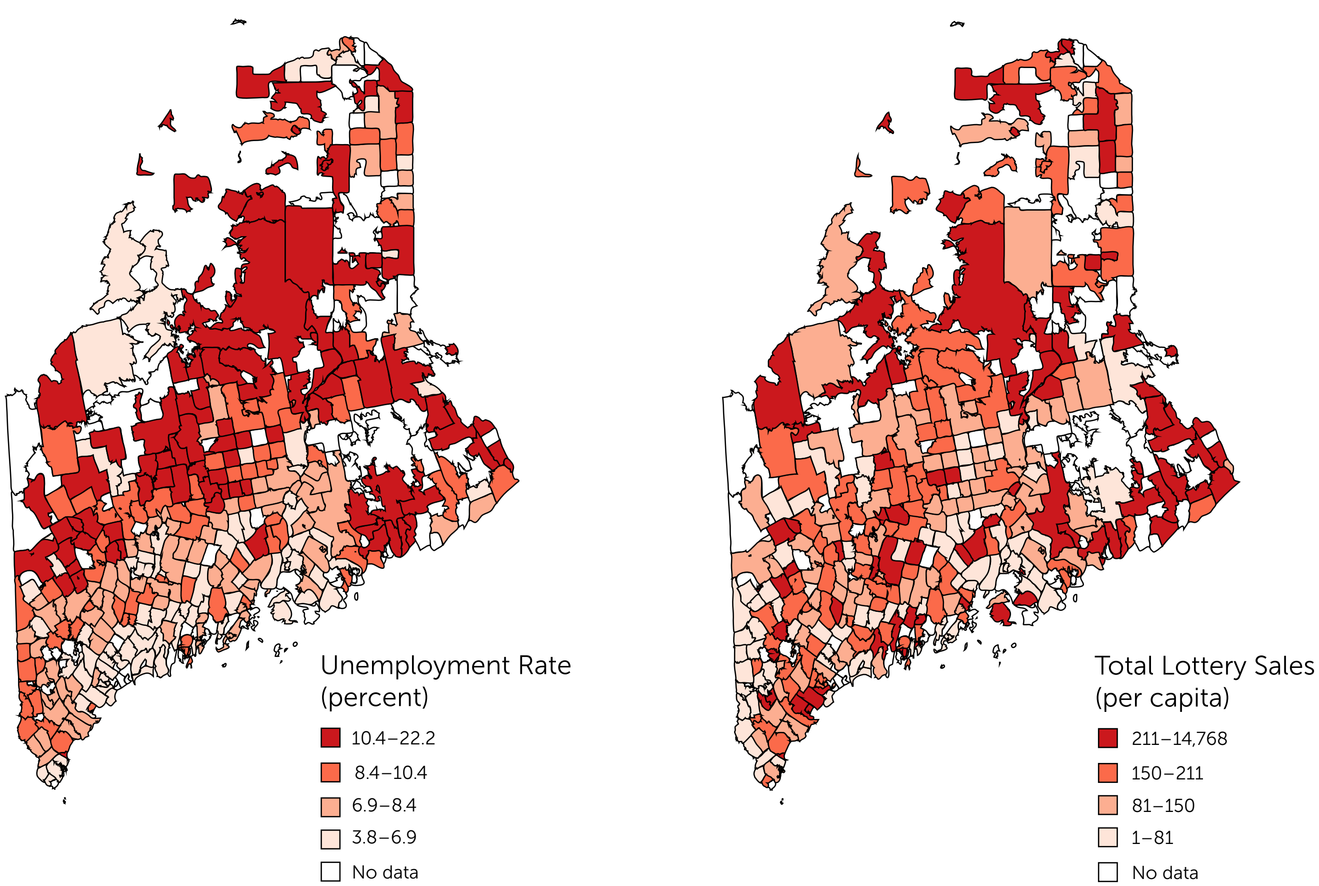
Using comprehensive store-level data on lottery ticket sales from the state of Maine, we can shed light on the relationship between financial shocks and lottery play. Our data include five years of observations from all sellers in the state of Maine. This includes total sales of lottery tickets, both draw sales and instant lottery sales. Notably, the five-year period covers 2010 through 2014, a period of recovery from a major recession. The analysis is conducted at the zip code level.

The analysis shows a large, positive, and significant relationship between unemployment rate and draw lottery sales. (See "Average Lottery Sales and Unemployment Rate by Zip Code in Maine.") A 1 percent increase in the unemployment rate tends to increase draw lottery sales in a zip code by 4.7 percent. There is no corresponding increase in instant lottery sales, suggesting that the recently unemployed are drawn to the larger jackpots of the draw game. When people become unemployed, lotteries seem to provide a risky opportunity to address the immediate problem. However, our analysis is somewhat more nuanced.

Though a rise in the percentage who are unemployed is associated with an increase in draw lottery sales, an increase in unemployment compensation within a zip code area is associated with a decrease in draw lottery sales. (See "Unemployment Rate and Per Capita Total Lottery Sales by Zip Code in Maine, 2010.") Higher average unemployment compensation can result either from having a greater number who qualify for unemployment, or from those who qualify receiving greater benefits. Unemployment benefits are generally based upon wages when previously employed. Thus, the result may indicate that increases in low-skill unemployment have very different results from increases in high-skill unemployment. An alternative explanation is that the result simply confirms that immediate reductions in income are associated with greater lottery play.

The lottery in Maine has gained significant attention lately for the number of those receiving public assistance who have won substantial jackpots.[14] These winnings raise interesting questions regarding the efficiency of using the lottery for public finance and the impact on other goals, such as social welfare. In this vein, we find that both the average number of dependents per household and income from pensions or social security are associated with lottery purchases—although in this case the association is with instant-play lottery sales. In other words, these longer-term indi-

### Unemployment Rate and Per Capita Lottery Sales by Zip Code in Maine, 2010



cators are associated with seeking after cheaper and more frequent chances at smaller jackpots.

## Raising the Question

Even though the probability of winning a big jackpot is very small, lotteries are thought by many of the most poor as the only means of escape to a better life. However, lotteries put an extra burden on this same socioeconomic group, and on those at risk of becoming a member of it. States offering lotteries to raise revenue for state budgets should consider the disproportionate impacts on the unemployed, the elderly, and those suffering financial setbacks and should be very careful how they market the lotteries. As Maine grapples with how to preserve its state lottery revenues without preying on the poor, it is worth asking the question more widely: what is the proper role of state lotteries?

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### Endnotes

1 "Lottery Sales and Transfers," North American Association of State and Provincial Lotteries, 2016, http://www.naspl.org/index.cfm?fuseaction=content&menuid=17&pageid=1025.

2 David H. Vrooman, "An Economic Analysis of the New York State Lottery," *National Tax Journal* 29, no. 4 (1976): 482–89.

3 "Lottery Sales and Transfers."

4 See G. Loewenstein, "Lottery Tickets and Credit Cards: The Dangers of an Irrational Brain. *Scientific American* 11 (2008); G. Blalock, D.R. Just, and D.H. Simon, "Hitting the Jackpot or Hitting the Skids: Entertainment, Poverty, and the Demand for State Lotteries," *American Journal of Economics and Sociology* 66, no. 3 (2004): 545–70.

5 "About Us," Maine Lottery, http://www.mainelottery.com/about/index.html.

6 Thomas A. Garrett and Thomas L. Marsh, "The Revenue Impacts of Cross-Border Lottery Shopping in the Presence of Spatial Autocorrelation," *Regional Science and Urban Economics* 32, no. 4 (2002): 501–19.

7 See Multi-State Lottery Association, http://www.musl.com.

8 "Powerball: Prizes and Odds," Multi-State Lottery Association, http://www.powerball.com/powerball/pb_prizes.asp.

9 Daniel Victor, "You Will Not Win the Powerball Jackpot," *New York Times*, January 12, 2016.

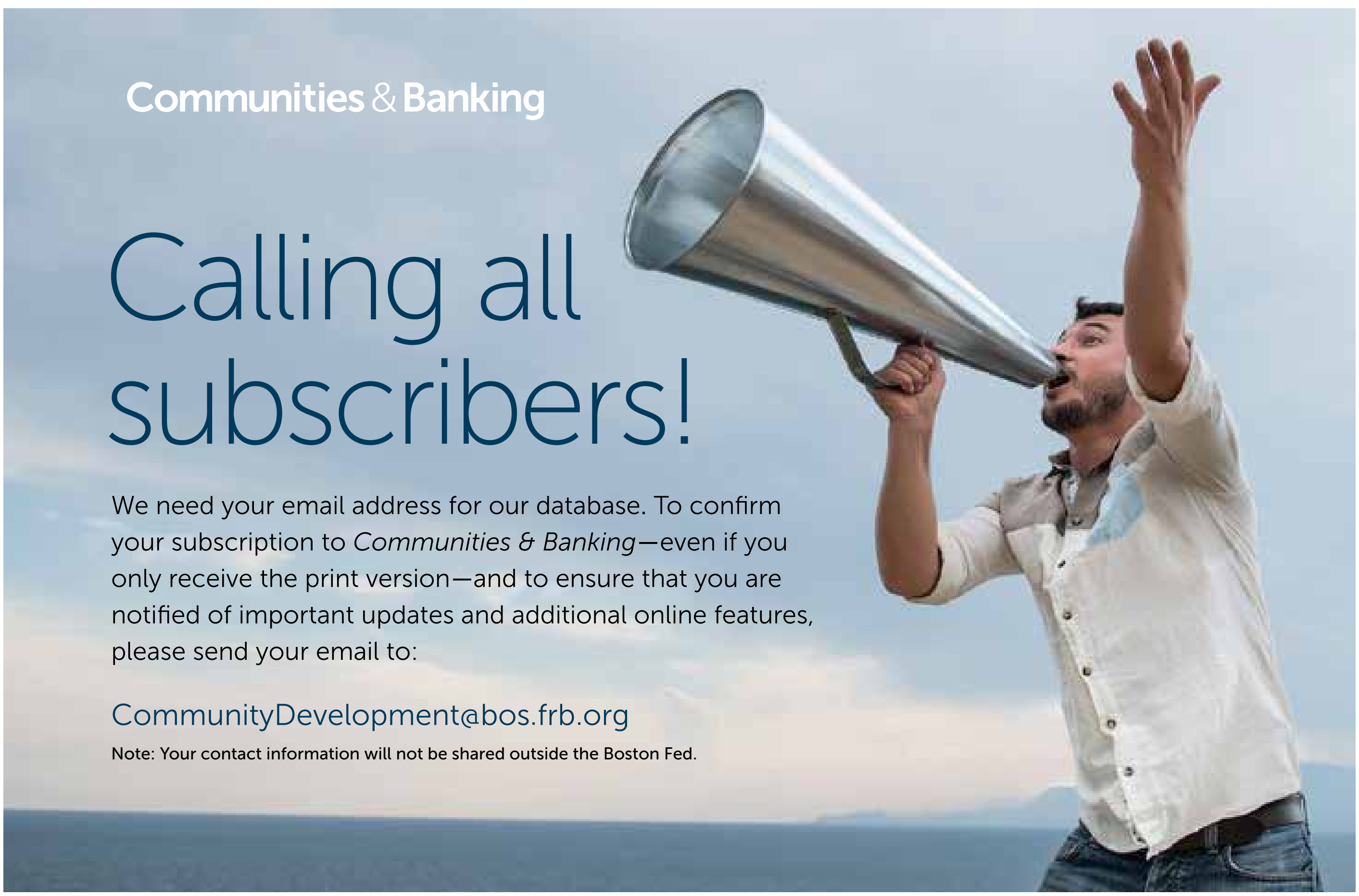
10 "Instant Tickets," Maine Lottery, http://www.mainelottery.com/instant/index.html.

11 Blalock, Just, and Simon, "Hitting the Jackpot or Hitting the Skids."

12 E. Haisley, R. Mostafa, and G. Loewenstein, "Subjective Relative Income and Lottery Ticket Purchases," *Journal of Behavioral Decision Making* 2, no. 3 (2008), 283–95.

13 Blalock, Just, and Simon, "Hitting the Jackpot or Hitting the Skids."

14 Dave Sherwood, "People on Public Assistance Spent Hundreds of Millions on the Lottery—and Took Home $22 Million in Winnings," *Pine Tree Watchdog*, December 16, 2015.




# Northern New England's Young Adults and the Social Security Disability Insurance Program

*Joyce Manchester*
VERMONT LEGISLATIVE JOINT FISCAL OFFICE

Why are so many people in Vermont, New Hampshire, and Maine under age 35 receiving Social Security Disability Insurance payments?

The Social Security Disability Insurance (SSDI) program pays cash benefits to adults under age 66 who are judged no longer able to perform "substantial" work because of a disability but who have worked in the past. In 2015, the program paid benefits to almost 9 million disabled beneficiaries in the United States, or about 4.8 percent of the resident population.[1] The average monthly benefit amount was $1,165.[2] Medicare benefits are available as well after a waiting period of 24 months on SSDI.

The northern New England states had relatively high prevalence rates—defined as the number of disabled workers on SSDI divided by the resident population in the same age group. In 2014, Maine had the sixth-highest overall prevalence rate at 7.6 percent. Vermont was 11th at 6.3 percent, and New Hampshire was 12th at 6.1 percent.[3]

Where northern New England stands apart from all other states is in SSDI prevalence rates for adults under age 35. Vermont, New Hampshire, and Maine had the highest rates of adults under age 35 enrolled in the SSDI program among all the states in 2014. (See "SSDI Prevalence by Age Group, 2014.") The rates were also significantly higher than the national average for adults between ages 35 and 54 in those states.

In addition, between 2000 and 2014 the shares of people on SSDI under age 35 and ages 35 to 44 in northern New England generally rose four times as fast as the increase in the national average. (See "Increase in SSDI Prevalence, 2000–2014.") The share of the population on SSDI among people ages 45 to 54 rose more than twice as fast as the national average.

Furthermore, increases in the number of SSDI beneficiaries by age group contrast with much smaller growth or declines in the overall populations of adults under age 45 in Vermont, Maine, and New Hampshire between 2000 and 2014. In Vermont, for example, the population ages 22 to 34 barely rose at all, but the number of disabled worker beneficiaries increased almost 90 percent. Why did this happen?

## Why Is Northern New England Different?

To investigate northern New England's special circumstances, consider the situation in Vermont. Several factors contribute to Vermont's high and rising prevalence of young people on SSDI: proactive efforts by state agencies to enroll young people in the SSDI program, out-migration of able-bodied young people (likely related to job opportunities), mental illness and opioid addiction,[4] and relatively high rates of health insurance coverage.

Two recent nationwide surveys help debunk one additional possible factor: the three northern New England states do not have a higher proportion of working-age adults with self-reported disabilities than other states. The 2013 American Community Survey shows Maine is ranked 9th, Vermont 21st, and New Hampshire 36th among all the states.[5] According to age-adjusted data from 2013 in the Behavioral Risk Factor Surveillance System, only about 20 percent of Mainers reported any disability, placing it 31st among the states.[6] About 19.5 percent of people in New Hampshire reported any disability, leading to a rank of 37th; about 18 percent of Vermonters reported any disability, placing it 45th.

## Proactive State Agencies

Vermont is known for its strong social-support programs. State agencies and other designated agencies in the state help to support SSDI application by people with disabilities who are unable to work. These agencies identify individuals who might need help finding a job, and, if working is too difficult, they help people work enough to qualify for the SSDI program and then assist with the onerous application process. Although New Hampshire and Maine are more conservative, both states offer substantial resources for people with disabilities.[7]

State agencies are likely aware that federally funded cash benefits from the SSDI program are usually more generous than partially state-funded Supplemental Security Insurance (SSI) cash benefits. The maximum federal monthly SSI amount in 2015 was $733,[8] with a state supplement in all but four states. The average SSDI monthly benefit nationwide was $1,165. Perhaps more important, SSI beneficiaries receive Medicaid benefits partially funded by the states, whereas SSDI beneficiaries receive federally funded Medicare benefits after a 24-month waiting period. In many states, Medicare benefits are more generous than Medicaid benefits.

## Out-migration

Despite a large in-migration of college students, Vermont in particular has fewer young people in their 20s and 30s than does the United States as a whole. At the same time, Vermont has a greater number of older residents than does the United States as a whole. Rural states commonly experience out-migration of young people who are looking for the job opportunities and social environments that come with urban settings.

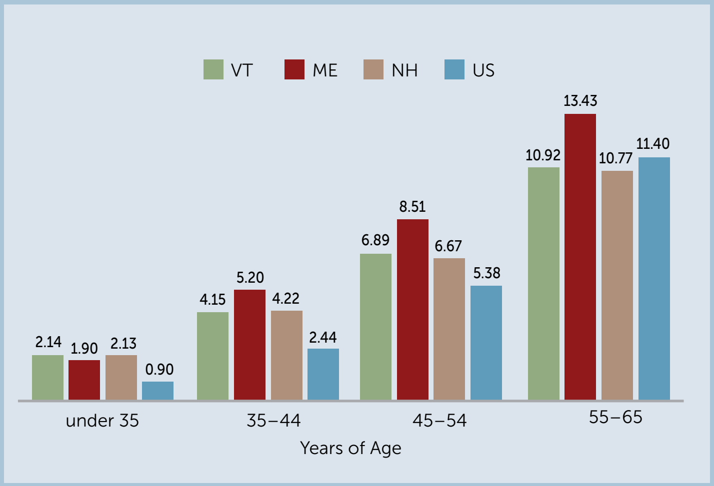
If able-bodied people in their 20s and 30s are more likely to live outside Vermont to find jobs and establish careers, the ones who stay behind may be those who are more likely to qualify for the SSDI program. Some evidence supporting that hypothesis comes from the Vermont Roots Migration Project, a comprehensive collection of about 3,700 individual perspectives on Vermont from present and former residents.[9] Those who left the state identify factors such as jobs, ability to earn higher wages elsewhere, and desire for more culturally diverse communities. If jobs and higher wages elsewhere encourage young people to leave Vermont, the proportion of those less able to pursue such opportunities, including young people who are struggling with physical and mental impairments, may be higher than in states with less out-migration of young people.

## Mental Illness and Opioid Addiction

Two issues that touch many parts of the social fabric in northern New England are mental illness and drug abuse, especially opioid addiction. The two are not unconnected: mental disorders associated with substance abuse include schizophrenia and bipolar, depressive, anxiety, conduct, and personality disorders.[10] According to the Vermont 2014 Mental Health National Outcome Measures, 39 out of every 1,000 people in Vermont accessed community mental health services in 2014, significantly more than the national rate of 22 per 1,000.[11] Furthermore, in 2014, while 35 percent of SSDI beneficiaries in the United States as a whole qualified for benefits based on mental disorders, that share was much higher in New Hampshire (51 percent), Vermont (45 percent), and Maine (42 percent).[12] It's difficult to know if those high percentages are related to opioid addiction, long and cold winters, or some other factor, but it is a curious phenomenon.

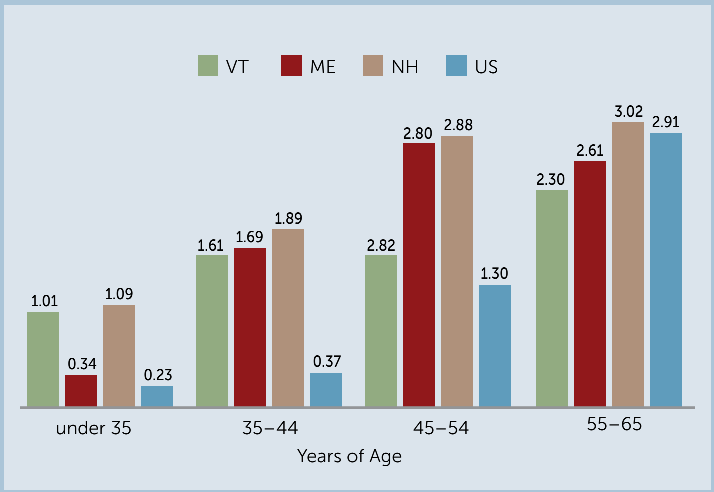
Opioid addiction is a national problem: the Centers for Disease Control and Prevention report that nationwide, use of heroin among young people increased 109 percent from 2002 to 2013.[13] But the three northern New England States have been especially hard hit: the National Survey on Drug Use and Health for 2013–2014 noted in one snapshot from the period that those states ranked in the top fifth of all states for use of illicit drugs.[14] Prescriptions for opioid pain medications can lead to opioid abuse as well.

### SSDI Prevalence by Age Group, 2014 (percent)




Sources: Social Security Administration, Census Bureau.

### Increase in SSDI Prevalence, 2000–2014 (percentage points)




Sources: Social Security Administration, Census Bureau.

### High Rates of Health Insurance Coverage

Additionally, high rates of health insurance coverage in Vermont and other New England states mean that young people are more likely to see health care professionals who might refer them to the SSDI programs. In both Vermont and Massachusetts, only 3.7 percent of the population had no health insurance coverage in 2014.[15]

### Other Factors

Other factors may contribute to the high rates of SSDI reliance in the region as well. Those who work with SSDI applicants point to intergenerational poverty as a factor. The fact that some northern New England areas lack diversity in jobs and have poor public transportation infrastructure may also play a role.

## Why Should States Care?

Residents' participation in the federal SSDI program may benefit them in some respects. State governments benefit as well when support comes from federal programs, as opposed to joint federal-state (for example, SSI or Medicaid) or state (for example, state subsidies for exchange-based health insurance) support programs. However, in the longer run, having large numbers of young people on SSDI means fewer people in the labor force and lower tax revenues, often for many years into the future, and more people who rely on income support from the government.


A preliminary estimate for Vermont, assuming that an SSDI beneficiary who worked would have paid an additional 40 percent of the median income tax payment for his or her age group, suggests the state would have received about $3 million more in state income tax revenue in 2013 if the percentage of SSDI beneficiaries under 55 had risen only with the national average, rather than at the faster actual rate. Such losses recur year after year once a person qualifies for SSDI benefits because few people leave the program for reasons other than reaching full retirement age (66) and converting to old-age benefits, or death. In 2013 in Vermont, for example, benefits were terminated for just 7.7 percent of disabled worker beneficiaries.[16] The majority of the terminations occurred when beneficiaries reached age 66 and converted to old-age benefits.

If the public understands the consequences of these relatively high rates of young people on SSDI, support may grow for investment in job-creation programs, work supports, further educational opportunities, and programs to alleviate drug abuse. Policymakers may also want to ask whether more can be done to help current SSDI recipients move beyond that reliance and return to the work force.

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### Endnotes

1 "Benefits Paid by Type of Beneficiary," Social Security Administration, https://www.ssa.gov/cgi-bin/currentpay.cgi; US Census Bureau, "Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States, States, and Puerto Rico Commonwealth: April 1, 2010 to July 1, 2014" (data for Vermont).

2 Ibid.

3 Numbers of SSDI beneficiaries by age group come from "Annual Statistical Report on the Social Security Disability Insurance Program, 2014" (report, Social Security Administration, Washington, DC, December 2015), Table 27, http://www.ssa.gov/policy/docs/statcomps/di_asr/2014/index.html. Population estimates come from the US Census Bureau table "Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States, States, and Puerto Rico Commonwealth: April 1, 2010 to July 1, 2014," US Census Bureau, Population Division, http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2014_PEPSYASEX&prodType=table.

4 Opiates are drugs derived from opium. The term "opioid," which originally referred to synthetic, opiatelike drugs, now is used as the more encompassing term, referring to both opiates and synthetics.

5 Jack Gettens, Pei-Pei Lei, and Alexis D. Henry, "Using American Community Survey Disability Data to Improve the Behavioral Risk Factor Surveillance System Accuracy" (Mathematica Policy Research DRC Brief No. 2015-05, Princeton, NJ, 2015, and personal communication).

6 Elizabeth A. Courtney-Long, et al., "Prevalence of Disability and Disability Type Among Adults—United States, 2013," *Morbidity and Mortality Weekly Report*, July 31, 2015, Table 1, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6429a2.htm?s_cid=mm6429a2_w.

7 For example, see *New Hampshire Young Adult Resource Guide*, http://www.dhhs.nh.gov/dcyf/documents/youngadult.pdf, or the variety of services offered by the Maine Office of Aging & Disability Services, http://www.maine.gov/dhhs/oads/.

8 "SSI Federal Payment Amounts for 2016," Social Security Administration, http://www.ssa.gov/oact/cola/SSI.html.

9 Cheryl Morse and Wendy Geller, "The Vermont Roots Migration Project" (Vermont Research Report Series No. 1, Burlington, VT, May 2015), http://www.uvm.edu/~crvt/reports/vt_migration_final.pdf.

10 "Opiate Abuse & Addiction Effects, Signs & Symptoms," Mount Regis Center, http://www.mtregis.com/opiates/effects-signs-symptoms.

11 See "Vermont 2014 Mental Health National Outcome Measures (NOMS): SAMHSA Uniform Reporting System," http://www.samhsa.gov/data/sites/default/files/URSTables2014/Vermont.pdf.

12 "Annual Statistical Report on the Social Security Disability Insurance Program, 2014, All Disabled Beneficiaries," Table 10, Social Security Office of Retirement and Disability Policy, https://www.ssa.gov/policy/docs/statcomps/di_asr/2014/sect01b.html#table10.

13 "Today's Heroin Epidemic Infographics," Centers for Disease Control and Prevention, July 7, 2015, http://www.cdc.gov/vitalsigns/heroin/infographic.html#graphic.

14 See "National Survey on Drug Use and Health: Comparison of 2002–2003 and 2013–2014 Population Percentages (50 States and the District of Columbia)," http://www.samhsa.gov/data/sites/default/files/NSDUHsaeLongTermCHG2014/NSDUHsaeLongTermCHG2014.htm.

15 Joyce Manchester, "The 2014 Uninsured Rate in Vermont Matches That of Massachusetts at 3.7 Percent, Surveys Show" (issue brief, Vermont Legislative Joint Fiscal Office, May 2015), http://www.leg.state.vt.us/jfo/healthcare/Uninsured_Rate_in_Vermont_and_Massachusetts.pdf. Little comparative information exists for all New England states. According to one Gallup poll, Maine has an uninsured rate almost as high as the national average, but other New England states were well below the national average. (See Joe Lawlor, "Maine's Uninsured Rate Dropped in First Year of Affordable Care Act, Poll Shows," *Portland Press Herald*, February 24, 2015, http://www.pressherald.com/2015/02/24/number-of-mainers-without-health-insurance-plummets-poll-finds/.)

16 "Annual Statistical Report on the Social Security Disability Insurance Program, 2013," Social Security Administration, Tables 50–51. Table 50 shows that for the United States as a whole in 2013, 59 percent of terminations occurred when the beneficiary turned age 66, and 33 percent of terminations occurred following the death of the beneficiary. About 2 percent of beneficiaries lost benefits because they no longer met the medical standards, and about 4 percent lost benefits because they earned too much.

# **Mapping** New England

## Child Food Insecurity

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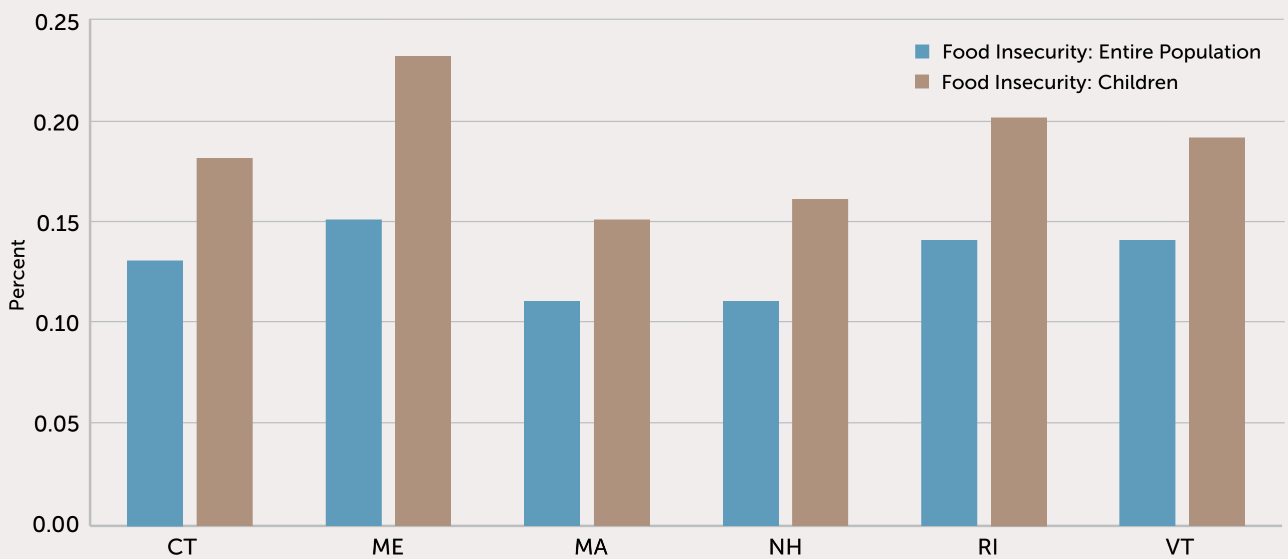
Hunger affects over 48 million Americans, and more than half of the counties with the highest rates of food insecurity are rural. Food insecurity is defined as limited or uncertain food availability or ability to obtain nutritionally adequate and safe foods.[1]

Data provided by Feeding America reveal that in New England, food insecurity rates are higher for children (those under 18) than adults. In 2014, 1,792,980 individuals in New England were food insecure. Of those, 518,220 were children. Maine has the highest child food insecurity rate (23 percent), while Massachusetts has the lowest (15 percent).

The map shows the child poverty rate and child food insecurity rate by county in New England. Norfolk and Middlesex county, Massachusetts, and Rockingham county, New Hampshire, have the lowest child food insecurity rate, falling between 11 to 12 percent. In general, counties that have high rates of child food insecurity also have high rates of child poverty. Piscataquis county, Maine, has the highest child food insecurity rate (28 percent) as well as the highest child poverty rate (30 percent).

Even more concerning than the food insecurity rate is the percentage of food-insecure children who do not qualify for federal nutrition assistance. These children live in households with income above 185 percent of the 2014 federal poverty guideline.[2] York and Cumberland County in Maine have child food insecurity rates of 21 percent and 20 percent respectively, but 45 percent and 42 percent (respectively) of these children are unlikely to qualify for federal nutrition assistance due to income ineligibility.

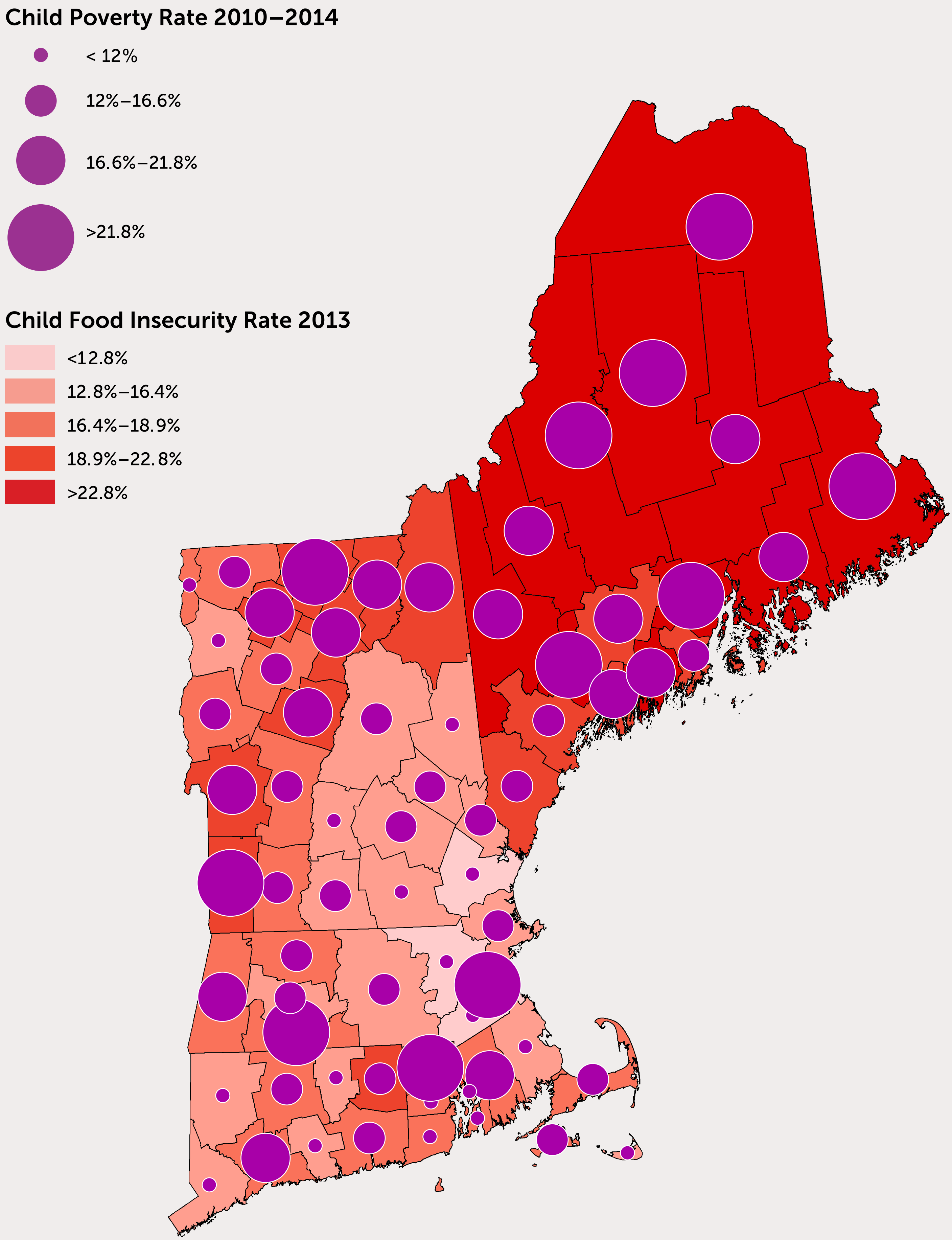
### Food Insecurity In New England




[1] "Core Indicators of Nutritional State for Difficult-to-Sample Population," *Journal of Nutrition* 120 (November 1990), 1559–1600.

[2] The federal poverty guideline is only one factor in determining nutrition assistance eligibility, and child nutrition programs can vary by state.

Sources: 2014 Feeding America (for child food insecurity rate) and 2014 five-year American Community Survey estimates (for child poverty rate).


Child Poverty Rate 2010–2014
< 12%
12%–16.6%
16.6%–21.8%
>21.8%
Child Food Insecurity Rate 2013
<12.8%
12.8%–16.4%
16.4%–18.9%
18.9%–22.8%
>22.8%

# Drugs, Death, and Despair in New England

*Shannon M. Monnat*
PENNSYLVANIA STATE UNIVERSITY

The opioid crisis has been called a national epidemic. In New England it blights urban, suburban, and rural communities, fueled by prescription pain killers and cheap and plentiful heroin.

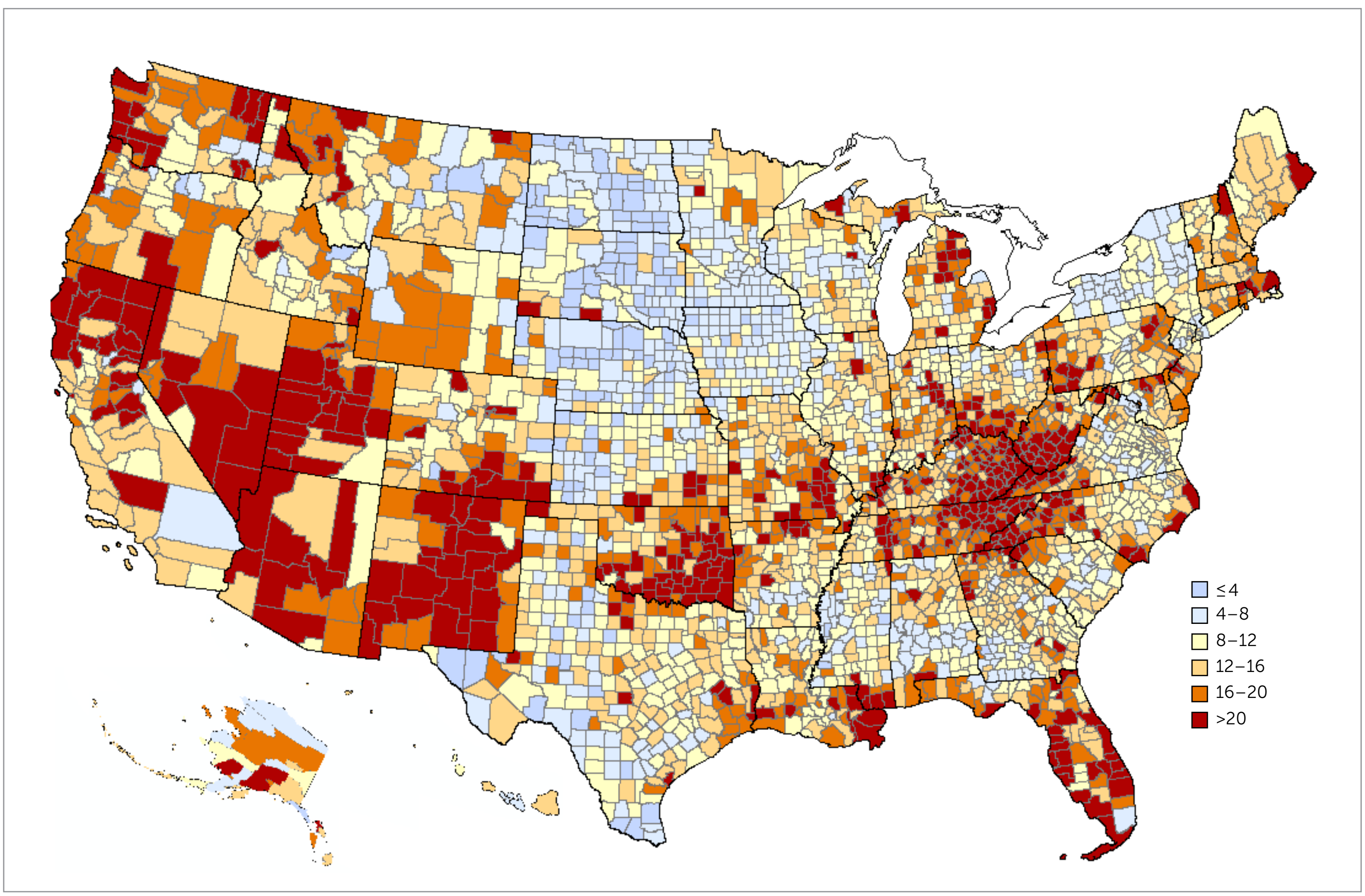
To say that the United States is in the midst of an opioid epidemic seems almost cliché at this point. Over the past two years, thousands of articles have been written about the crisis; nearly all US states and counties have held public hearings, town halls, and symposia; Congress passed the Comprehensive Addiction and Recovery Act of 2016; and President Obama pledged funding and action to address the crisis.

Most media commentary has characterized the crisis as a national epidemic. That portrayal is accurate. The US overdose death rate reached 15 per 100,000 in 2014 and is climbing at a much faster rate than other causes of death, due primarily to opioids (prescription pain relievers and heroin).[1] Opioids now kill more Americans than do motor vehicle accidents. In 2014, 28,647 (61 percent) of drug overdose deaths involved an opioid, and nearly all counties in the United States experienced increases in drug overdose mortality over the past decade. (See "County Drug Overdose Deaths per 100,000 in 2014.")

High overdose mortality rates were once mostly restricted to large cities and Appalachia. Now, however, places considered buffered from widespread drug problems as recently as a decade ago, including New England, face surging drug overdose mortality rates. Between 2002 and 2014, drug overdose mortality rates more than doubled in every New England county. Washington County, Maine; Barnstable, Bristol, and Suffolk counties in Massachusetts; Coös County, New Hampshire; and Kent and Providence counties in Rhode Island now have drug overdose mortality rates above 20. (See "Overdose Deaths per 100,000 for New England Counties in 2002 and 2014.")

The highest overdose mortality rates in New England span the rural-urban continuum, including places as urban as New Haven County, Connecticut, and places as sparsely populated as Essex County, Vermont—the least populated county in New England. Still, the 20 New England counties that had overdose mortality rates above 16 in 2014 have several characteristics in common, including poverty, disability, unemployment rates that exceed New England averages, and above-average declines in manufacturing and manual-labor occupations since 1970.

## County Drug Overdose Deaths per 100,000 in 2014



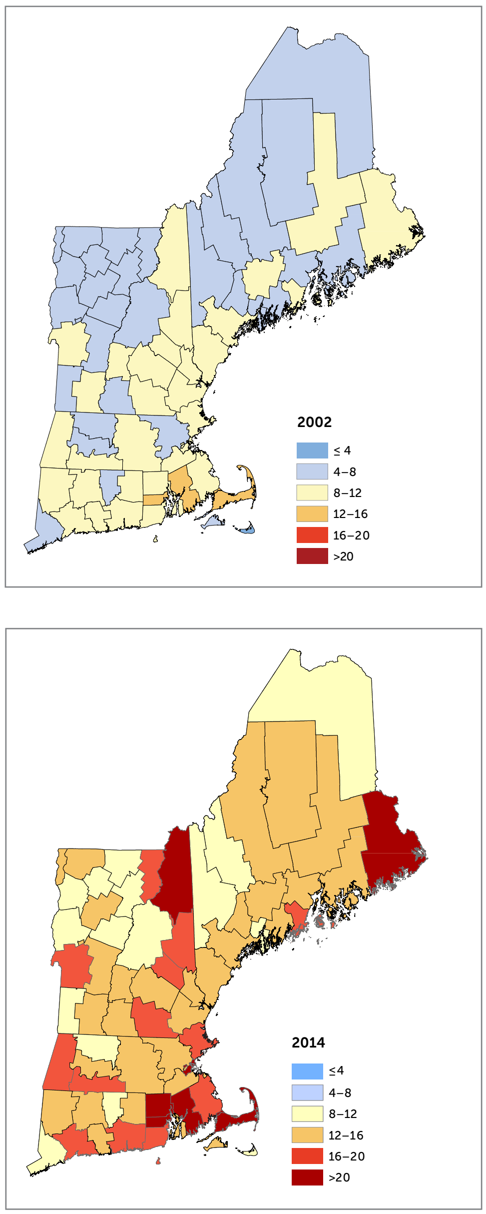

Source: Centers for Disease Control and Prevention, National Vital Statistics System, Age-Adjusted Death Rates for Drug Poisoning, 2014.

## Adolescent Drug Abuse and Overdose

Nationally, overdose rates are highest among individuals aged 25 to 54, but adolescents and young adults also abuse and overdose. In 2014, the overdose death rate among individuals aged 15 to 24 was 8.6, with the highest rate among non-Hispanic white males (17.4), followed by non-Hispanic white females (7.0), Hispanic males (6.0), black males (4.0), Hispanic females (2.5), and black females (2.3).[2]

As noted earlier, the surge in overdose mortality has been driven by prescription pain relievers (e.g., oxycodone, hydrocodone) and heroin. Although rates of abuse are much higher among young adults (18–25), over 1.1 million adolescents (4.7 percent of youth aged 12–17) abused prescription pain relievers in 2014.[3] Among both teens and adults, only marijuana is more frequently abused than prescription pain relievers.[4] See "Reported Drug Use by State, 2013–2014, Individuals 12–17" and "Reported Drug Use by State, 2013–2014, Individuals 18–25." Adolescent drug use is particularly worrisome because this is the period when most substance abuse and addiction disorders begin, and abuse during these formative years increases the likelihood of future economic precariousness, relationship instability, poor health, and criminal-justice involvement.

Drug Overdose Deaths per 100,000 in 2002 & 2014




Rates of current (past-month) illicit-drug use among adolescents and young adults are higher in all New England states than in the United States overall.[5] However, overall illicit-drug use rates are driven mostly by marijuana. Although there are short- and long-term adverse effects associated with marijuana use, there have been no reported overdose deaths from marijuana. Nonmedical use of prescription opioids, while much less prevalent, is unequivocally much more deadly. Adolescent abuse of prescription pain relievers in New England is comparable to the overall US rate. However, among young adults (aged 18–25), rates of nonmedical use of prescription opioids are higher in Connecticut and New Hampshire than in the United States overall.

Using data from the National Survey on Drug Use and Health, my colleague and I found that the most salient contributors to opioid abuse among adolescents and young adults are poor mental health, peer substance use, the perception that substance use is not risky, and having access to drugs.[6] Adolescents who smoke daily and consume alcohol to excess are more likely than their nonsmoking and nondrinking peers to use illicit drugs and to abuse prescription opioids. Importantly, use of emergency departments, where opioids are more commonly prescribed, also increases adolescents' risk of abusing opioids.

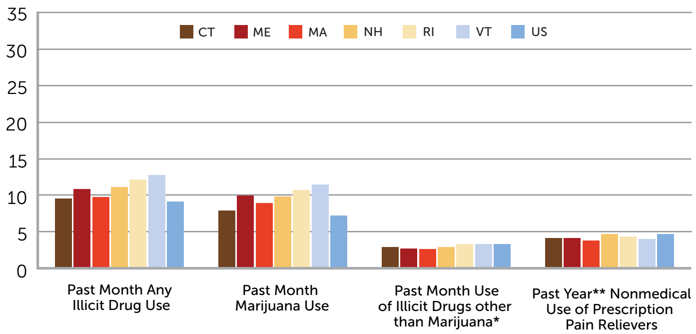
## How Did We Get Here?

US overdose deaths involving prescription opioids have quadrupled since 1999. Not coincidentally, so have sales of prescription opioids. Annual sales of OxyContin (a brand name for the drug oxycodone)—the most widely prescribed, abused, and profitable prescription narcotic in history—alone skyrocketed from $45 million in 1996 (when it entered the market) to $3.1 billion by 2010. In *Dreamland: The True Tale of America's Opiate Epidemic*, Sam Quinones notes that Purdue Pharma, the company that makes OxyContin, aggressively marketed its blockbuster drug for chronic noncancer pain, particularly in areas with relatively high shares of blue-collar laborers who were at risk of work-related back pain and other injuries.[7] In 2007, Purdue Pharma and three of the company's executives pleaded guilty in federal court to criminal charges that they misled regulators, physicians, and patients about OxyContin's addiction and abuse potential. However, by then, 5.2 million Americans were already misusing prescription opioids,[8] and annual prescription opioid–related overdose deaths exceeded 14,000.[9]

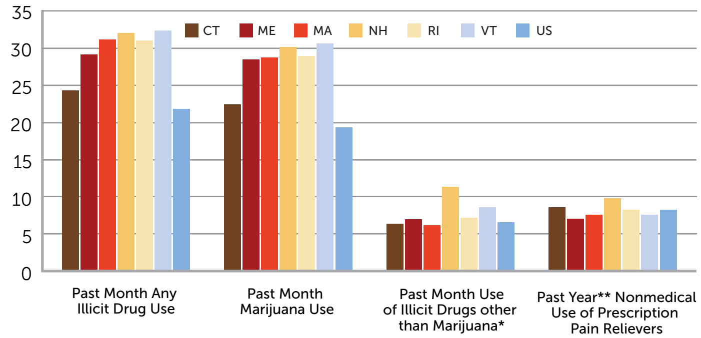
Over the past decade, public-health and government efforts have focused on combating the prescription opioid epidemic by cracking down on "pill mills" (medical establishments that prescribe pills inappropriately), creating statewide prescription-drug monitoring programs, and educating physicians on safe prescribing practices. These efforts have been largely successful; there have been recent declines in prescription opioid abuse and overdose deaths among both adolescents and adults.[10] However, there has been an unintended consequence. As the supply of prescription opioids has dwindled, heroin, which produces the same high and is just as addictive, has filled the gap. About 80 percent of people who are currently using heroin report misusing prescription opioids first.[11] Increased mixing of heroin with the synthetic pain reliever fentanyl (which is up to 50 times more powerful than heroin) has made New England's opiate problem much more deadly.

Moreover, despite widespread awareness of prescription opioid

### Reported Drug Use by State, 2013–2014, Individuals 12–17




### Reported Drug Use by State, 2013–2014, Individuals 18–25



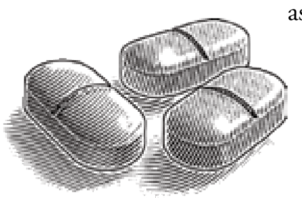

Source: US Substance Abuse and Mental Health Services Administration, 2013–2014 NSDUH State-Specific Tables *Illicit drugs other than marijuana include cocaine (including crack), heroin, hallucinogens, inhalants, and prescription-type psychotherapeutics used nonmedically. **Estimates of past-month use are not available by state for prescription pain relievers.

abuse, high rates of opioid prescribing continue, though they vary by state.[12] Maine currently ranks first and New Hampshire ranks third in the nation in prescribing rates for long-acting/extended-release opioids, which have an especially high overdose risk because abusers can crush them and instantly achieve the full dose (possible even with so-called abuse-deterrent formulations). Massachusetts (8th), Connecticut (13th), Rhode Island (14th), and Vermont (16th) are also ranked in the top 20 states for long-acting/extended-release prescribing. All six New England states also have above-average rates of high-dose opioid prescribing, and all but Vermont have above-average prescribing rates for benzodiazepines—psychoactive sedatives commonly abused along with opiates, drastically increasing overdose risk.

## Saving Lives and Communities

Although physicians are aware of the highly addictive nature of opioids and are cognizant of the overdose risk, they also know that if they cut patients off from these highly addictive narcotics, some are likely to turn to heroin, which, thanks to increased distribution from Mexico, has become easily accessible and incredibly cheap: heroin is now cheaper than a pack of cigarettes or a six-pack of beer in most parts of the United States.[13]

Although increasing first-responder and community access to naloxone (a drug that counteracts the effects of an opioid overdose) has potential to reduce overdoses, and increased use of medication-assisted treatments like buprenorphine holds potential for treating opioid dependence, preventing initiation is the key to turning the tide on the opiate abuse and overdose epidemic. About 60 percent of current heroin users report first using heroin between the ages of 17 and 25,[14] suggesting that those are the years to target. Different strategies will work better in different communities, but general prevention strategies include more comprehensive physician training in pain management and addiction, moving physicians toward safer prescribing practices, and better parent and youth education on the risks of opioid use for minor injuries. Finally, given high rates of abuse and overdose in communities that have long suffered from employment restructuring and economic decline, comprehensive job-growth strategies that emphasize secure employment with livable wages for individuals all along the educational gradient are likely to have the most significant long-term and sustainable impacts in New England and elsewhere.



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### Endnotes

1 "Multiple Cause of Death Data," Centers for Disease Control and Prevention, 2016, http://wonder.cdc.gov/mcd.html.
2 Ibid.
3 Shannon Monnat and Khary K. Rigg, "Rural Adolescents Are More Likely Than Their Urban Peers to Abuse Prescription Painkillers" (Carsey Research National Fact Sheet No. 32, Carsey School of Public Policy, University of New Hampshire, 2015).
4 Shannon Monnat and Khary K. Rigg, "Examining Rural/Urban Differences in Prescription Opioid Misuse Among US Adolescents," *Journal of Rural Health* 32, no. 2 (2016):204–18.
5 "National Survey on Drug Use and Health (NSDUH) Series," Substance Abuse and Mental Health Services Administration, http://www.samhsa.gov/data/population-data-nsduh.
6 Monnat and Rigg, "Rural Adolescents Are More Likely Than Their Urban Peers to Abuse Prescription Painkillers."
7 Sam Quinones, *Dreamland: The True Tale of America's Opiate Epidemic* (London and New York: Bloomsbury, 2015).
8 "Trends in Nonmedical Use of Prescription Pain Relievers: 2002 to 2007" (report, National Survey on Drug Use and Health, Rockville, MD, 2009), http://media.samhsa.gov/data/2k9/painRelievers/nonmedicalTrends.htm.
9 "Multiple Cause of Death Data."
10 Ibid.
11 "National Survey on Drug Use and Health (NSDUH) Series."
12 L.J. Paulozzi, K.A. Mack, and J.M. Hockenberry, "Vital Signs: Variation Among States in Prescribing of Opioid Pain Relievers and Benzodiazepines – United States, 2012," *Morbidity and Mortality Weekly Report* 63, no. 26 (2014):563–68.
13 L. Bernstein, "Why a Bag of Heroin Costs Less Than a Pack of Cigarettes," *Washington Post*, August 27, 2015.
14 "National Survey on Drug Use and Health (NSDUH) Series."

# Capital and Collaboration: Strengthening Community Investment in Smaller, Postindustrial Cities

*Katie Grace, Robin Hacke, and Carmen Panacopoulos*

When stakeholders work together and think of community investment in terms of key functions rather than as a series of individual quests, smaller cities can benefit.

In 1850, Lowell was the second-largest city in Massachusetts[1] and America's largest industrial center, driven by the growth of a textile industry that helped launch the US Industrial Revolution. By the mid-1900s, textile manufacturing had moved to the more cost-competitive South, and the city was a shell of its former self, with a decaying urban core and fleeing population. Today, after a number of years of concentrated economic-development efforts, Lowell is facing significant demographic change and still lags the state in median family income, employment rates, and educational attainment.

Smaller, postindustrial cities like Lowell dot the landscape of New England. Often far from major metropolitan regions like Boston, these cities are struggling to build, or arrest the decline of, their economies and are home to sizeable communities of low- and moderate-income (LMI) individuals and families who are not well served by traditional economic-development activity that seeks to attract large-scale employers and prioritizes job volume over job quality. Community investment, which we define as financial investment to accomplish social, economic, and environmental goals in LMI areas, provides a foundation that can be built upon to support LMI communities and the cities where they live. By thinking in new ways about what it takes to strengthen community investment in a place, we hope to improve the ability of cities like Lowell to attract and deploy private capital to public purpose.

## Community Investment and Capital Absorption

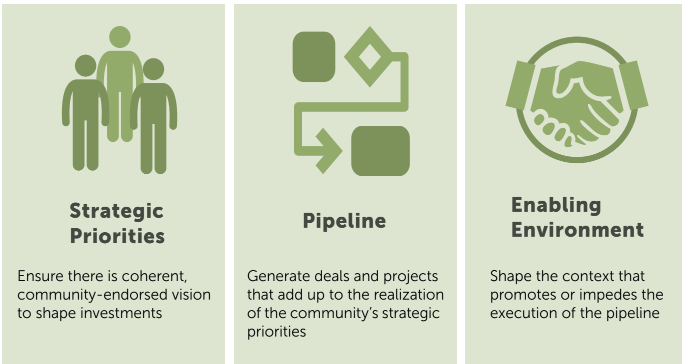
Community investment nurtures economic and neighborhood vitality and can help make cities more equitable and sustainable. It works in places and sectors where conventional market activity does not fully meet community needs. Community investment transactions are often complex, time-consuming, and politically fraught, requiring intense collaboration among stakeholders and relying on subsidies, tax credits, and grants to be financially viable.

Community investment transactions are often complex, time-consuming, and politically fraught.

Practitioners of community investment tend to view their work as a series of individual heroic quests, rather than as part of a system for conducting socially valuable activity. That viewpoint makes it difficult to address the challenges of coordination and build capacity for the long term.

To better understand the system of community investment, and with the hope of developing interventions that would permit

## The Community Investment System



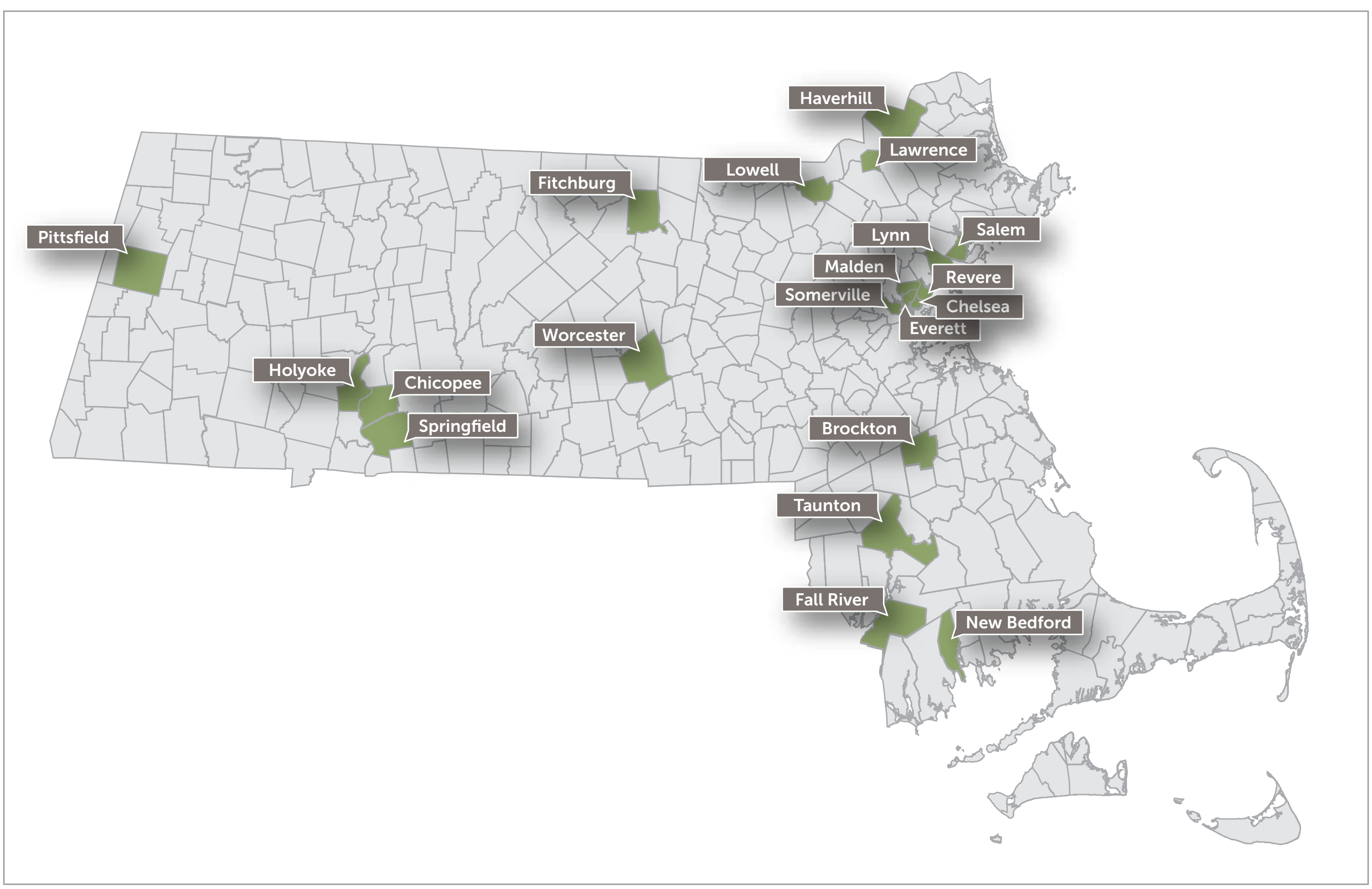

it to achieve greater scale, efficiency, and impact, we developed a framework we call "capital absorption."[2] The capital absorption capacity of a city or region is that place's ability to attract and make effective use of various forms of capital in support of underserved communities. The capital absorption framework goes beyond consideration of individual transactions to identify functions that support effective community investment in three areas: strategic priorities, project pipeline, and an enabling environment. (See "The Community Investment System.")

Application of this framework generally involves two sets of activities: assessment of the current system and effort to change it. These activities are carried out by a cross-sector group of stakeholders that may include public-sector leaders, investors, foundations, developers, small-business owners, nonprofit organizations, and others. During assessment, the cross-sector group examines the current system's strengths and gaps and evaluates how the three functions are currently being performed.[3] The assessment includes questions like the following:

- Are there clear priorities guiding activity?
- How does the pipeline of investments match up with those priorities?
- Where does capital currently come from, and where is it going?
- What policies and practices foster or impede the execution of investments that align with priorities?

Then the cross-sector group considers how to change the existing system, identifying and then implementing interventions that will strengthen community investment. These interventions may include adopting new policies, bringing in new stakeholders, gathering data, or aligning resources and attention.

## Locations of Massachusetts' Working Cities



## Capital & Collaboration Initiative

In 2013, the Federal Reserve Bank of Boston launched the Working Cities Challenge,[4] a competition designed to incentivize cross-sector leadership and collaboration for transformative change in 21 postindustrial cities in Massachusetts. (See "Locations of Massachusetts' Working Cities.") In 2015, the Boston Fed partnered with the Initiative for Responsible Investment at the Harvard Kennedy School and Robin Hacke of the Kresge Foundation to look at the systemic issues that affect the flow of capital to these cities. The Capital & Collaboration project is using the capital absorption framework to understand the community investment system in the Working Cities as it pertains specifically to two types of investments: large-scale mixed-use and commercial real estate and small-business development.

The project is guided by a state-level, cross-sector working group of more than 25 individuals representing state and quasi-public agencies, banks and financial institutions, community development financial institutions, and other intermediaries and advocacy organizations. Over the past year, the project has conducted more than 50 interviews, convened five focus groups, and gathered and analyzed extensive data to learn how community investment operates in the Working Cities. We also held a workshop to which 11 of the Working Cities brought multisector teams to assess their own local capital absorption capacity. The Capital & Collaboration working group is now consolidating insights and formulating an action plan that identifies steps its members' institutions can take, individually and together, to strengthen the community investment system.

We have already gained several insights into the community investment system in the Working Cities:

- Practitioners believe that Working Cities are at a disadvantage because interest, focus, funding, and the ability to do deals are overconcentrated in the city of Boston. Boston's market size and strength, its density of opportunity, and the strong network of relationships among its developers, investors, and public-sector officials, among other factors, make it easier to do deals there than in the Working Cities.
- Both for-profit and nonprofit developers desire greater transparency and predictability in the allocations of tax credits and other state subsidies, which they said would reduce risk and the time it takes to execute a transaction, potentially resulting in more deals.
- Stakeholders also emphasized the importance of another type of certainty: a clear expression of a city's plans and priorities. Developers and bankers agreed that resources flow more readily when cities put forth actionable plans, especially ones that are bolstered by visible investment of municipal resources.
- Mixed-use and commercial projects are hampered by the siloing of housing and commercial/industrial development. The distinct actors, policies, and funding flows associated with each type of development create fragmentation and complexity that make these deals incredibly challenging to execute, with many projects requiring a decade to complete. In addition, many developers of mixed-use spaces struggle to develop attractive ground-floor spaces and to find tenants for these spaces who would contribute to street-level vitality and meet the needs of residents.
- To support small-business development, investors must consider the distinct needs of different types of businesses. Segmenting by size of business, sector, and growth potential is necessary in order to provide appropriately targeted capital and technical assistance. In many cases, availability of capital is not the constraining factor: what small businesses in these communities often need are small-dollar loans, help with accounting and operational issues, and assistance finding and finishing spaces.

## Lessons Learned to Date

The Capital & Collaboration initiative is the first statewide application of the capital absorption framework in the nation. Although the work is ongoing, we are already learning some interesting lessons about the interaction between the local, regional, and statewide scale in the community investment context.

Developers and bankers agreed that resources flow more readily when cities put forth actionable plans.

Given the magnetic pull exerted by a major metropolis like Boston, getting capital to flow to projects further afield requires intentional measures. Cities can help attract capital by clearly defining their plans and priorities, thereby reducing uncertainty for developers and investors. State actors can identify policies that may unintentionally penalize smaller jurisdictions and can then work to counteract their effect. When stakeholders from the public, private, and philanthropic sectors work together, it becomes easier to assess how the community investment system is performing and how its performance can be strengthened. This work offers potential routes forward for understanding and addressing need in LMI communities in postindustrial cities throughout New England.

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**Katie Grace** *is the assistant director of the Initiative for Responsible Investment.* **Robin Hacke** *is a senior fellow at the Kresge Foundation.* **Carmen Panacopoulos** *is a senior relationship manager in the Regional & Community Outreach department of the Federal Reserve Bank of Boston. Contact them at katie_grace@hks.harvard.edu, RLHacke@kresge.org, and Carmen.Panacopoulos@bos.frb.org, respectively.*

### Endnotes

1 "Population of the 100 Largest Urban Places: 1850," US Bureau of the Census, https://www.census.gov/population/www/documentation/twps0027/tab08.txt.

2 This work is the result of a partnership between Robin Hacke, senior fellow at the Kresge Foundation, David Wood and Katie Grace at the Initiative for Responsible Investment at Harvard University's Kennedy School of Government, and Marian Urquilla, from the consulting practice Strategy Lift. An overview of our framework can be found in "Community Investment: Focusing on the System" (working paper, Kresge Foundation, March 2015), http://kresge.org/sites/default/files/Kresge-Community-Investment-Focusing-on-the%20System-March%202015_0.pdf.

3 Useful tools for conducting such an assessment may be found here: http://kresge.org/library/community-investment-focusing-system-worksheets.

4 For more information, see www.bostonfed.org/WorkingCities/.


# Mobile Payments Enhance Convenience for Transit Riders

*Elisa Tavilla*
FEDERAL RESERVE BANK OF BOSTON

More transit agencies are offering mobile payment options and other travel tools, including real-time arrival information and service alerts, to improve the overall transit experience.

For many transit riders, fare payment can be a cumbersome process. It often requires waiting in long lines, carrying cash or exact change, and figuring out how much to pay. Commuters want more convenient and efficient ways to pay for transit; in particular, they would like to pay using their smartphones. According to the Pew Research Center, nearly two-thirds of US adults owned a smartphone in 2015.[1] These mobile devices have become an integral part of life, and many commuters use them to access news updates, check email, listen to music, and shop while riding the subway, bus, and commuter rail.

## What Commuters Want

It is not surprising, therefore, that commuters would like to take advantage of their phones to pay for their daily journey. A 2012 MasterCard commuter survey found that nearly half of US commuters would use a mobile phone to pay for mass transit.[2] The report noted several common pain points among commuters concerning transit fare payments:

- 44 percent worry about missing a bus or train while waiting in line to buy or add money to a fare card.
- 24 percent worry about not having exact change.
- 26 percent worry about not having enough cash to pay for a mass transit ride.[3]

When the consulting firm Accenture conducted a survey of public-transit users, the results were similar. Four out of five US transit riders indicated that they would be willing to pay more per ride for a completely paperless journey, while over 75 percent said they would pay more if they could use their smartphones for ticketing.

## US Transit Agencies with Mobile Ticketing Apps
(by metro region and launch dates)


1. TriMet Tickets, Portland, OR (2013)
2. SFMTA Muni Mobile, San Francisco, CA (2015)
3. LADOT LA Mobile, Los Angeles, CA (2015)
4. Metrolink, Southern CA (2016)
5. MTS mTicket, San Diego, CA (2013)
6. CapMetro, Austin, TX (2014)
7. DART GoPass, Dallas, TX (2013)
8. METRO Q, Houston, TX (2016)
9. Ventra, Chicago, IL (2015)
10. RTA gomobile, New Orleans, LA (2015)
11. NICTD South Shore, South Bend, IN–Chicago, IL (2014)
12. VRE, Northern VA–Washington, DC (2015)
13. MBTA mTicket, Boston, MA (2012)
14. NY Waterway, New York, NY (2012)
15. NICE gomobile, Nassau County, NY (2014)
16. MTA Metro-North & LIRR, New York, NY (2016) *Under Contract
17. NJTransit MyTix, New Jersey (2013)

Source: Payment Strategies, Federal Reserve Bank of Boston, 2016.

In particular, commuters want to avoid waiting in lines: 93 percent of respondents in New York and 87 percent of those in Washington, DC, said they would find it easier to use public transit if queuing were eliminated.[4]

## Transit Agencies' Response

Increasingly, transit agencies are adding mobile payment capabilities to increase convenience and payment options for their customers. (See "US Transit Agencies with Mobile Ticketing Apps.") Commuters can pay for transit fare from virtually any location at any time using their smartphones. A transit rider downloads the mobile ticketing app, creates an account, selects his fare product, pays for it with a credit, debit, or commuter benefits prepaid card (some agencies also accept PayPal and allow split payments), and the ticket is delivered to his phone prior to his trip. It is similar to other mobile commerce transactions. Most apps offer options that are comparable to paper tickets, ranging from single-ride tickets to monthly passes, and some agencies also offer reduced fares to eligible riders with proper identification (e.g., senior citizens, persons with disabilities, and students). For zone-based fares, the app displays originating and destination stations to help customers select the correct fares.

Mobile ticketing is commonly used in open-entry transit systems that employ visual fare inspection because digital tickets are easily displayed on phone screens. Riders must activate their mobile tickets before they are valid for travel. Most agencies perform visual inspection of the ticketing screen for dynamic features that change depending on the route and time of day, such as changing background colors, a visible time stamp, and animation. These features make inspection easy for train conductors and bus operators. Alternatively, transit agencies can validate an onscreen ticket electronically using a scanning device.

### Early Adopters

Transit agencies in Boston, Dallas, and Portland, Oregon, were among the first to offer mobile ticketing apps. In 2012, the Massachusetts Bay Transit Authority (MBTA) launched its MBTA mTicket app for commuter rail and ferry. Dallas Area Rapid Transit (DART) introduced the GoPass app, and the Tri-County Metropolitan Transportation District of Oregon (TriMet) deployed TriMet Tickets in the following year. In all three cities, the apps have been well received and adoption continues to grow. Mobile represents a growing percentage of ticket sales and revenue for each agency, while sales through other fare channels, including ticket vending machines, fare boxes, retail outlets, and on-board cash payments, are declining. The MBTA currently sells 60 percent of its single-ride commuter rail tickets via mTicket. Mobile accounted for 18.9 percent of MBTA commuter rail sales, and about 6 percent of the agency's total fare revenue in fiscal year (FY) 2015.[5] DART's mobile ticket sales represented 13.9 percent of total sales in FY 2015, up from 9.6 percent in FY 2014.[6] Similarly, mobile ticketing made up about 11 percent of TriMet's fare revenue in FY 2015, an increase from 8 percent in the previous year.[7]

### Integrated Apps: Chicago Transit Authority's Ventra

Commuters who travel on multiple modes of transit with different operators and separate fare systems often must carry several fare cards. An integrated app that enables fare payments and trip planning across regional transportation systems and modes makes things much easier. In November 2015, the Chicago Transit Authority (CTA) launched just such an app, Ventra, which supports fare payment and travel information for the city's three transit operators. It is one of the first truly regional transit apps in the United States.[8] CTA and Pace (Chicago suburban) bus riders can manage their Ventra accounts (e.g., check balance, manage funding source, view transaction history) and add funds and passes via the app. Customers of Metra Rail (the Northeast Illinois Regional Commuter Railroad Corporation) can purchase mobile tickets through the app using their Ventra account or other payment method. The app also offers schedules, real-time arrival information, and nearby route locations for all transit modes. CTA plans to add trip-planning capabilities and a virtual Ventra card to a future version of the app.

### Trip-Planning Features

Mobile technology also allows transit riders to better plan their travel. Most transit apps include trip-planning features, such as maps, schedules, real-time arrival information, and service alerts. These tools help commuters minimize wait times and missed connections. They also make it easier for occasional riders to navigate unfamiliar transit routes and fare systems. Some agencies are incorporating complementary transportation services, such as parking and rideshare, to help riders get to and from their final destinations in areas not covered by public transit.

### Bundling

In several cities, transit agencies are partnering with public attractions to encourage use of mobile payments and mass transit. Bundling improves the efficiency of ticketing and encourages consumers to take public transportation to local events. While many consumers prefer to take mass transit to public events, occasional transit riders who are less familiar with the fare system can cause bottlenecks at ticket machines. Bundling can help to address this problem and prevent frustrating customer experiences. For example, Boston's MBTA customers can purchase commuter rail tickets to Gillette Stadium for all New England Patriots home games and other public events via the mobile ticketing app. In Dallas, DART's GoPass app bundles transit fare with discounted general admission to the Dallas Zoo and State Fair of Texas.

## The Psychology of Mobile Tickets

It is important to note that transit agencies are offering mobile payment as a supplementary option. Therefore, customers who do not have smartphones or prefer to use traditional payment methods can still do so.[9] It is also interesting to note that the precision afforded by real-time activation of mobile tickets can potentially influence customers' financial decisions and fare product choices. With GoPass, DART observes that most tickets are purchased and used within 24 hours, and more riders buy tickets valid for two hours as opposed to day passes, perhaps because riders can activate their digital tickets precisely when they need to travel. Given that transit fare payments are a recurring expense for commuters, it is likely that the convenience and value experienced by those who try mobile ticketing will encourage greater use of mobile payments in other retail venues too.

* * *

As mobile payments continue to evolve, transit operators will be able to integrate a degree of mass customization that takes personalized travel preferences into account or makes location-based offers. They may also choose to institute loyalty programs to further enhance commuters' experience using and paying for public transportation. We can expect much more innovation—and many more apps—in the future.

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### Endnotes


1 Aaron Smith, "U.S. Smartphone Use In 2015," (report, Pew Research Center, Washington, DC, April 2015), http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/.

2 MasterCard Worldwide, "Half of US Commuters Would Use Their Mobile Phone for Transit Payment" (slideshare presentation, March 2012).

3 Ibid.

4 "Public Transportation Users Predict Big Increases in the Use of Smartphones, Paperless Travel and Social Media, New Accenture Survey Reveals" (news release, Accenture, May 21, 2013), https://newsroom.accenture.com/news/public-transportation-users-predict-big-increases-in-the-use-of-smartphones-paperless-travel-and-social-media-new-accenture-survey-reveals.htm; Keith Barry, "Commuters Would Pay More for Better Public Transit Tech, Study Says," *Wired*, May 2013, http://www.wired.com/2013/05/public-transit-tech/.

5 Interviews, MBTA, November 2015.

6 Interviews, DART, November 2015.

7 Roberta Alstadt, "TriMet Mobile Tickets Top 5 Million in Less Than Two Years," *TriMet News*, August 25, 2015, http://news.trimet.org/2015/08/trimet-mobile-tickets-top-5-million-in-less-than-two-year/.

8 For more information about the Ventra app, see https://www.ventrachicago.com/.

9 Several US transit agencies are in the process of installing account-based, open-payment fare systems that can accept near-field communications (NFC) mobile payments, such as Apple Pay. While Chicago's Ventra and Salt Lake City's UTA fare systems currently accept NFC mobile payments, actual usage remains low. Other cities planning to implement this type of fare system include Washington, DC, Philadelphia, Portland (Oregon), Dallas, New York, and Boston. Greater availability of open-payment fare systems will create more opportunities for commuters to pay for fares using their smartphones. For more information on transit mobile payments, see Elisa Tavilla, "Transit Mobile Payments: Driving Consumer Experience and Adoption" (report, Federal Reserve Bank of Boston, February 2015), http://www.bostonfed.org/bankinfo/payment-strategies/publications/2015/transit-mobile-payments.pdf.

# The Create Jobs for USA Program

*Sam Richardson*
FEDERAL RESERVE BANK OF BOSTON

Starbucks and Opportunity Finance Network teamed up to stimulate job growth through small-business lending.

One of the most debilitating legacies of the Great Recession is the very slow job recovery that followed. The United States did not return to prerecession job levels until nearly five years after the recession ended. Even now there are a large number of discouraged workers who are not in the labor force because of lack of job opportunities. Low-wealth, low-income, minority, and otherwise marginalized communities bore the brunt of the recession and were least equipped to deal with it. In late 2009, when unemployment was cracking a record-high 9 percent for whites, unemployment was over 16 percent for blacks and nearly 13 percent for Hispanic and Latino Americans.[1] The employment divide was (and still is) similarly stark across education, wealth, and income stratification.

Integral to the story of lagging job growth in the United States are struggling small businesses. Small businesses account for nearly 55 percent of current employment and 66 percent of net new jobs since the 1970s.[2] Although they lead in job creation in boom times, they are vulnerable to recessions, when outside sources of financing may dry up. Even during the recovery, many small businesses reported difficulty in securing loans.

## Tackling the Challenge

In 2011, Opportunity Finance Network (OFN) and Starbucks Coffee Company teamed up to launch Create Jobs for USA Fund to help alleviate the credit crunch facing community businesses. OFN is a nonprofit network of community development financial institutions (CDFIs)—private financial institutions that focus on community businesses and individuals in distressed and underserved markets. A team that combined OFN's track record of creating jobs through community business financing with the corporate leadership, resources, and branding of Starbucks joined hands to help realign the backbone of America's economy.

From 2011 to 2014, the Create Jobs for USA fund raised more than $15 million in donations from individual and corporate donors. Starbucks donated $5 million and encouraged individual donations through its "Indivisible" campaign, which rewarded customers who donated to the fund with a branded wristband. In addition, Starbucks launched an "Indivisible" line of products—wristbands, mugs, and other items—and made a donation for each item sold to customers.

Funds were distributed as capital grants to 120 CDFIs selected from OFN's lender network for their financial performance and track record of serving community businesses. CDFIs were then able to leverage the grants to provide over $105 million in loans to community businesses. The expectation was that additional jobs would be created as the CDFIs reinvested the repaid loans, resulting in a virtuous cycle of job growth in communities that need it most.

## What Was Learned

The Create Jobs for USA Fund provided an excellent opportunity to learn whether and how CDFI lending helps with job creation.

### Characteristics of Loans

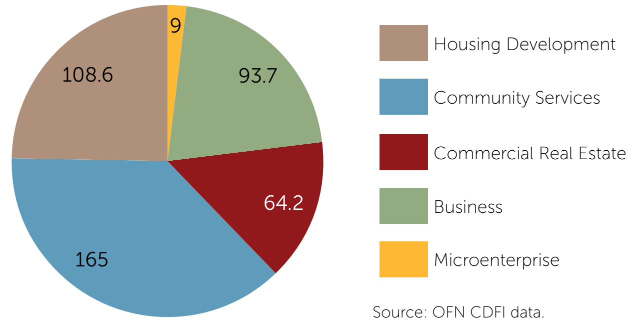
OFN's network of CDFIs is sprawling, and those awarded grants through Create Jobs for USA made loans to many businesses over a wide range of industries and geographies. Initial reports from the 120 CDFIs who received OFN grants reveal that they made 34,915 loans overall, providing $2.3 billion in funding.[3] CDFI loans tend to serve low-income, minority neighborhoods. CDFI loan recipients were located in ZIP-code regions with 70 percent minority population, on average (as opposed to 37 percent national average), and with median household incomes of $45,000 (as opposed to $52,800 national median).[4] CDFIs disbursed loans to community businesses in every state and in all industry sectors represented by 20 two-digit North American Industry Classification System categories of the US Census Bureau, in addition to all five types of OFN-defined community businesses. (See "OFN's Five Types of Community Business.")

### Reporting and Results

OFN set up a two-step reporting system on job creation. In addition to details about the loan, such as size and date closed, OFN required CDFIs to gather certain details about job creation from businesses in their portfolios. This initial report included existing full-time-equivalent (FTE) jobs, FTE jobs that would likely have been lost without the loan, projections for FTE jobs that would be created within a year of closing the loan, and FTE jobs that would be created more than a year after the loan. CDFIs were then asked to get a follow-up report of actual job creation from each business within a year of closing a loan.

Of the loans closed within a year of receiving a grant, 1,434 had a follow-up report.[5] The report includes information

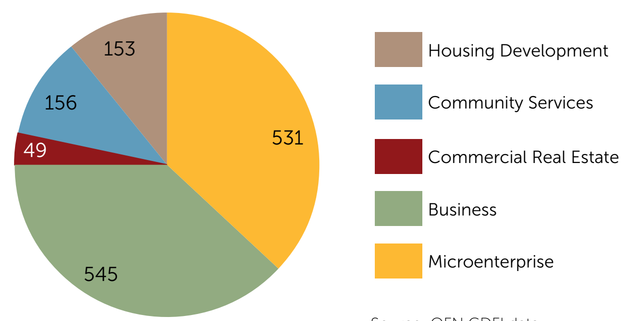
## Total Loaned (millions of dollars)




Source: OFN CDFI data.

on direct, indirect, and induced job creation and retention (DII jobs) associated with each loan. DII jobs are all jobs created and retained, including not only primary jobs at the recipient business but also secondary jobs created at other establishments as a result of increased activity in the local economy. The measure of DII jobs was generated using IMPLAN Impact software, which uses industry and geographic information to simulate local labor markets and assigns a multiplier to capture the secondary effects of creating jobs on the broader economy, giving a fuller measure of jobs impact.

## Number of Loans




Source: OFN CDFI data.

Of loans with follow-up reports, community services received the largest volume of CDFI financing, followed closely by housing development, business, and commercial real estate. (See "Total Loaned.") Microenterprises received only a small fraction of the total value of loans disbursed, despite accounting for the second-largest number of loans (531). (See "Number of Loans.") The business category received the greatest number of loans (545), while housing development, community services, and commercial real estate received far fewer.

Over all community businesses for which there is a follow-up report, $440 million was lent and 28,100 DII jobs were created or retained, which comes out to $15,700 loaned per DII job. (See "Another Approach to Estimation" for an alternative, though still supportive, set of numbers.) The relationship was found to vary significantly by type of community business. Ratios ranged from $3,200 per DII job (microenterprise) to $32,200 per job (housing development), with higher ratios indicating that lending was less efficient in terms of DII jobs per dollar. (See "Average Loan Amount per DII Job.")

### OFN's Five Types of Community Business

**Microenterprises:** Community businesses with five or fewer employees (including proprietor), and with a maximum loan/investment of $50,000.

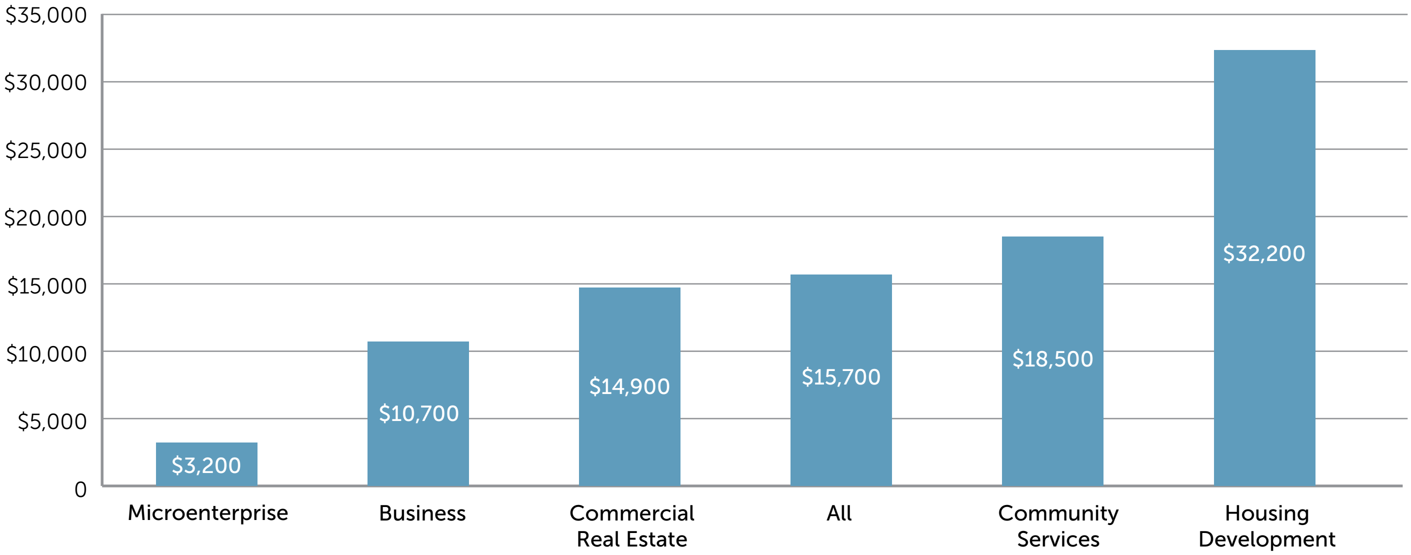
**Businesses:** Community businesses with more than five employees or with CDFI financing in an amount greater than $50,000.

**Commercial Real Estate:** Construction, rehabilitation, acquisition, or expansion of nonresidential property used for office, retail, or industrial purposes.

**Community Services:** Community-service organizations such as human- and social-service agencies, advocacy organizations, cultural and religious organizations, health care providers, and child care or education providers, regardless of tax status.

**Housing Development:** Predevelopment, acquisition, construction, and renovation to support the creation of rental housing, service-enriched housing, transitional housing, and owner-occupied housing.

## Average Loan Amount Per DII Job




Source: Author's calculations based on OFN CDFI data.

The efficacy of microenterprise and business lending supports the notion that small-business and microenterprise financing through CDFIs is a potentially cost-effective lever for promoting job recovery in the United States. This result is consistent with the economic intuition that small businesses are labor intensive and therefore hire more workers per unit capital. More capital-intensive businesses, such as housing development and commercial real estate, create fewer jobs per dollar lent, as we might expect. Regardless of the type of community business receiving the loans, however, lending programs may still have positive value to the communities they are in.

### Another Approach to Estimation

Least-squares regression, a more sophisticated method for estimating dollars lent per additional job, gives an estimate of $25,600 over all projects. This technique gives estimates of $11,000, $28,000, $46,000, $9,600, and $128,000 for microenterprise, business, community services, commercial real estate, and housing development, respectively. This article displays descriptive statistics for the sake of simplicity and ease of interpretation.

There are a few important caveats with this analysis. Due to data constraints, I cannot make claims about the quality of jobs across types of community business. There are likely significant and systematic differences in wages, repayment, and other important variables across types of community business, which ideally should be controlled for when comparing the amount loaned per DII job. Notably, it is not possible to determine whether CDFI financing was only a portion of total funding for a project, because the only data available is on the amount of CDFI lending for each project. This influences estimates for some types of community business, like commercial real estate and housing development, which are more likely to have additional outside financing, compared with business and microenterprise. Furthermore, a ratio of dollars lent over jobs is a summary statistic and should not be interpreted as the total "loan cost" of creating or retaining additional jobs. Nevertheless, our evidence suggests that CDFIs are likely to be an effective tool for promoting jobs growth through community business lending. They provided an excellent channel for Create Jobs for USA's grants, which were put to use creating opportunity and changing lives for Americans that needed it most.

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### Endnotes

1 Data from Haver Analytics/Bureau of Labor Statistics, http://www.bls.gov/cps/demographics.htm.

2 See "Small Business Trends" on the US Small Business Administration website, https://www.sba.gov/content/small-business-trends-impact.

3 These figures represent the CDFIs' total number of loans and funds disbursed, not only the loans and funds made possible by Create Jobs for America.

4 Author's calculations. ZIP-code incomes generated using a weighted average of census tract median incomes, from 2009–2013 American Community Survey five-year estimates obtained using the National Historical Geographic Information System, Version 2.0, at the Minnesota Population Center.

5 Ambiguity about the true meaning of zero jobs created led to the dropping of reports of zero. Multiple loans sharing CDFI, date, geography, and type of community business were assumed to be on the same project and hence grouped into a single project.

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***This event is open to the public; however, advance registration is required.***

working cities challenge

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