



***“Educational Attainment and Economic Outcomes”***

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I am pleased to be participating in this early childhood summit. And I would particularly like to thank the Boston Children’s Museum for continuing its tradition of innovative work on behalf of children by co-sponsoring this and other events during this their centennial year. The Boston Children’s Museum is a close neighbor of the Federal Reserve Bank of Boston, and my children and I personally benefitted from this proximity as we often took advantage of its many exhibits and programs. It was the only museum

that my children did not respond with, “not another museum” when I told them where we were going that day.

I became aware of some of the important economic work being done on early childhood programs in a series of discussions I had over the years with fellow Fed economist, Art Rolnick. Art was then the research director at the Federal Reserve Bank of Minneapolis and made two important observations. First, if you help someone early in life, they reap a lifetime of benefits. And a second close corollary is that programs that help kids learn have a high return for them as individuals and for society as a whole. These observations have been validated by good empirical research and have served as a foundation for the funding of important programs that apply these observations. Others on the agenda today are going to discuss such programs in more detail.

While many of the economic studies on the value of good early childhood programs have focused on the average return from these investments, I am going to discuss how educational attainment can impact the variability of a person’s economic outcomes. In particular, during economic downturns, those with poor educational attainment are disproportionately likely to become unemployed and that unemployment can have a far-reaching impact on other aspects of life, including expected future earnings, wealth and home ownership.

The second point I will emphasize today is the importance of helping those communities that have the fewest resources available to address both economic and social problems. The Federal Reserve Bank of Boston has been doing significant work in mid-sized cities in New England, and we will be announcing a new mid-sized cities initiative in Massachusetts next month in conjunction with a number of partners including the

Commonwealth of Massachusetts, Living Cities, and the Massachusetts Competitive Partnership. Today I want to highlight that if you are living in a mid-sized city in Massachusetts with a high poverty rate, your chances of educational attainment look quite different from what they would be if you lived in a mid-sized city with a low poverty rate. While there has been progress in more widespread adoption of early childhood education – especially in reaching communities that have difficulty affording such programs – it is exactly these communities that potentially generate the highest returns on such investment. This is particularly important because these investments not only influence educational attainment as a youth, but can be an important element in employment opportunities and job retention as an adult, even during difficult economic times, such as those we continue to experience.

### **Educational Attainment and the Variability of Economic Outcomes**

Figure 1 displays the unemployment rate by educational attainment. First, notice that the unemployment rate for less educated workers is always significantly higher than the rate for more highly educated workers. Second, while the unemployment rate approximately doubled during the Great Recession across all education categories, the unemployment rates of people with low educational attainment rose to staggering levels. For those with less than a high school education, the unemployment rate was a bit below 8 percent prior to the recession and reached a peak of almost 16 percent as a result of the recession. Thus, nearly one in six people with less than a high school education were unemployed at one point during the recession. Thankfully, the unemployment rate for

those with low educational attainment has come down, despite the only modest overall recovery we have had to date.

While it is well established that spells of unemployment have a significant negative impact on labor income for years, Federal Reserve Bank of Boston staff recently examined the impact that a long duration of unemployment has on future labor income.<sup>1</sup> Their research found that 10 years after a spell of unemployment, an individual makes 16 percent less on average than an individual who did not experience that spell of unemployment. The impact is even larger with longer-duration unemployment. After 20 years, the earnings of a short-duration unemployed worker are roughly the same as those without a spell of unemployment, but the individual with a long-duration spell of unemployment is still somewhat worse off. Furthermore, there is no “catch up” for the years of lost income. It is important to note that our staff found that longer-duration unemployment is negatively correlated with education.

Not surprisingly, those lost opportunities result in unfavorable collateral effects. For example, spells of unemployment have a significantly negative impact on future homeownership rates, and those who experience a period of long-duration unemployment have a significant permanent loss in wealth.<sup>2</sup> Spells of unemployment also entail huge non-pecuniary costs to the individual and the family.

Such observations are important in a variety of contexts, but let me mention two. In terms of monetary policy, it implies that spells of unemployment can have a lasting impact long after the economy recovers. If spells of unemployment have a persistent impact on income, wealth and home ownership, then a more aggressive response to persistently high unemployment rates is warranted. More rapid economic growth is

likely to not only reduce the unemployment rate, but also reduce some of the collateral damage the economy may otherwise face from the spells of long-duration unemployment. Continued accommodative policy, such as continuing our asset purchase program through this year, is an appropriate response to labor market scarring.

Particularly relevant for today's discussion is that the failure to help children reach their highest potential educational attainment level can have a significant impact on their likelihood of experiencing significant economic shocks when the economy experiences a downturn. This much greater risk of unemployment as an adult for the child who does not receive a sufficient education impacts a variety of other economic outcomes, such as whether an individual can buy a home or accumulate wealth to afford a reasonable retirement or educate their children.

A critical factor in obtaining sufficient education in many disadvantaged areas is the availability of programs that help maximize a child's potential. Government cuts that do not consider the long-run return on investment from such programs are likely to be both economically inefficient and could potentially cause longer-run harm to the economy.

### **A Comparison of Massachusetts Cities**

I would like to highlight differences in educational attainment by examining Massachusetts mid-sized cities with the highest poverty rates versus those with the lowest poverty rates.<sup>3</sup> These charts demonstrate that patterns in failure to obtain a high school education actually are fairly persistently present in the data by educational outcome at much earlier ages.

Figure 2 shows the differences in the share of children under age five living below the poverty level, comparing those cities with the lowest overall poverty rates to those with the highest poverty rates as well as to the statewide average for all cities and towns. In four of the five high poverty mid-sized cities, more than 40 percent of the children under age five are living below the poverty level. In all five cities, the share of children under age five living below the poverty level is more than double the average for Massachusetts. Among the cities with the lowest poverty rates, four of the five cities have child poverty rates less than half the Massachusetts average of 16.8 percent.

Figure 3 shows that differences for children occur as early as three or four years of age. In the low poverty mid-sized cities, 67.7% of children age three and four are enrolled in a preschool or pre-kindergarten program. In contrast, less than half – 42.6% – of children age three and four are enrolled in school in the high poverty mid-sized cities. Lawrence has the lowest share at 26.8%.

Figure 4 shows that the patterns of enrollment visible in Figure 3 are quite similar to the patterns in third grade Massachusetts Comprehensive Assessment System (MCAS) test scores. Cities with high poverty rates report much lower scores on both the reading and math MCAS tests, sometimes having less than half the proficiency rate of cities with low poverty rates. Though there are many population differences between high and low poverty mid-sized cities that can affect test scores, it appears that early school enrollment is a critical factor that clearly has an effect on student achievement.<sup>4</sup>

Figure 5 shows that these patterns persist with high school graduation rates. In all five low poverty cities, 80 percent or more of students graduate from high school in four years. In all five high poverty cities, less than 70 percent of students graduate from high

school in four years. In four of the five high poverty cities, the high school graduation rate is 61 percent or lower. This has implications for future earning power, as those who do not graduate from high school earn much less on average than those with higher educational attainment. As I highlighted in the beginning of my talk, this also has significant implications for the likelihood of experiencing a spell of unemployment with the associated collateral impact. Thus, not only the stream of earnings but also the volatility of earnings may be impacted.

Children in high poverty cities face considerable challenges on many levels. However, access to educational opportunities can have a significant impact on their economic outcomes throughout their lives. Given the discrepancies between childhood outcomes related to education, both public and private resources need to be focused on providing more educational and developmental opportunities for children living in cities with fewer resources, resources that have been particularly strained over the past five years.

### **Concluding Observations**

The work of this conference is important. There is more to be done to make sure that all children have the opportunity to succeed and flourish. Educational opportunity is an important element in the likelihood of that happening.

I do want to end on a positive note. Figure 6 shows that there has been a significant increase in the number of children with access to full day kindergarten. Research and policy advocacy regarding early childhood education has had an impact, and resources from private and public sources are increasingly providing more

educational opportunities for children. However, as my charts indicate, more work needs to be done, and I hope all of us in this room will do our part to make that happen.

Thank you.

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<sup>1</sup> This research was included in a March 13, 2013 memo by Daniel Cooper, Senior Economist at the Federal Reserve Bank of Boston, titled “Effects of Employment Duration on Earnings and Other Outcomes.”

<sup>2</sup> It is important to emphasize that one cannot perfectly distinguish between extended unemployment spells that result from “sorting” in the labor market, such that less-productive workers are the first unemployed and the last to find new jobs, versus bad luck on the part of a productive employee whose firm failed. But one only needs to assume that a modest portion of these long-duration unemployment spells reflect the bad luck case to arrive at sizable long-run impacts of extended unemployment.

<sup>3</sup> To select the mid-sized cities in Massachusetts with the highest and lowest poverty rates, cities with population of 35,000 – 200,000 were sorted by population poverty rate (the share of all people whose income was below the poverty level), using the three-year estimates for 2009 – 2011 from the American Community Survey (ACS).

<sup>4</sup> In addition, reading at grade level in third grade has been correlated with a reduction in later dropout rates.