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# The Economic Benefits of Reducing the Dropout Rate In the Nation's Metropolitan Areas

## *Technical Notes*

With generous support from State Farm®, the Alliance for Excellent Education (the Alliance) has published a series of fact sheets demonstrating to communities the estimated local economic benefits that would likely result from reducing the number of students who drop out from just one high school class.

Through a groundbreaking analysis of regional economic data, the Alliance developed findings on several important economic factors including individual earnings, home and auto sales, job and economic growth, spending and investment, local and state tax revenue, and human capital.

Economic benefits of reducing the dropout rate for *all* students were initially projected for the forty-five metropolitan areas that include the fifty most populous cities in the country. Later, the Alliance for Excellent Education (the Alliance) added an additional forty-three metropolitan areas. Expanding the study, the Alliance most recently released findings on the economic benefits of reducing the dropout rate among *students of color*. These findings are currently available only for the original forty-five metropolitan areas.

**About the analysis.** To conduct the analysis, the Alliance used a sophisticated economic input-output model developed by Economic Modeling Specialists Inc. (EMSI)—an Idaho-based economics firm specializing in socioeconomic impact tools. The economic model provides projections of gross benefits to U.S. Census-defined metropolitan statistical areas (MSAs)<sup>1</sup> based on an increase in the number of local students who graduate from high school. It includes the most recent economic data available from sources such as the U.S. Census Bureau and the U.S. Bureau of Labor Statistics.

The Alliance analyzed the MSAs to estimate the contributions that would-be dropouts in these scenarios—referenced below and elsewhere as “new graduates”—would likely have on the local economy by earning high school diplomas with their peers. The majority of the data included in the economic model is MSA-specific; therefore, the analyses yielded results that are uniquely tailored to each metropolitan area.

**Calculating new graduates.** To calculate findings based on reducing by half the number of *all* local students who dropped out from the Class of 2008, the Alliance utilized MSA-level dropout counts estimated for the Class of 2008 by Editorial Projects in Education's (EPE) Research Center, a research division of the nonprofit organization that publishes *Education Week*. Using state-reported, district-level data, EPE calculated the Cumulative Promotion Index—a widely accepted method for calculating graduation rates—for all regular, public school districts that fall within each MSA. These district-level graduation rates were aggregated to yield MSA-level graduation rates. Because of a lag in data reporting, the most recent graduation rates available for use in this analysis were for the Class of 2005.<sup>2</sup> Thus, the Class of 2008 is assumed to have a graduation rate

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<sup>1</sup> Metropolitan statistical areas consist of both a central urban area and surrounding counties that have strong social and economic ties to that urban area.

<sup>2</sup> The MSA-level graduation rates for the Class of 2005 were presented in EPE's April 2009 report, *Cities in Crisis 2009—Closing the Graduation Gap*.

similar to the Class of 2005. In most cases, this assumption will not result in significant inaccuracies; graduation rates for most districts typically change only a fraction of a percent each year.<sup>3</sup>

Based on the total number of Class of 2008 ninth-grade students enrolled during School Year (SY) 2004–05, these MSA-level graduation rates were used to calculate the number of on-time completers for the class. This number was subtracted from the same total number of ninth-grade students to find the estimated number of students who did not graduate with the rest of their class. For the purpose of this analysis, the Alliance assumed these students to be dropouts from the Class of 2008.<sup>4</sup>

MSA-level dropout counts were later broken down further to estimate the number of students of color who dropped out from the Class of 2008. EMSI estimated dropout counts for each subgroup based on the total number of dropouts in each MSA and trends in educational attainment for each subgroup in each MSA. Total dropout counts by subgroup in each MSA were calculated based on MSA-specific data showing the number of adults in each subgroup who have less than a high school diploma.

**Calculating economic benefits.** The economic model produces conservative estimates of a given number of new graduates' economic contributions to an MSA. Methods of calculations of economic contributions are identical whether the analysis includes *all* dropouts within an MSA or only students of color who have dropped out within an MSA. These contributions are calculated based on the assumption that new graduates will earn a diploma at the age of eighteen and will immediately enter the workplace, or will pursue postsecondary education and enter the workforce immediately after completion.

Regardless of the path, graduates are assumed to work until they reach the age of seventy, receiving increasing annual earnings for each year that they are in the workforce. Following these assumptions, the year during which graduates will make the average of their expected annual earnings is identified as their career midpoint, which, in this analysis, is expected to be when new graduates reach thirty-nine years of age. The findings from this analysis correspond to that midpoint; benefits reported are either a snapshot for that single year, or a cumulative figure that includes each year prior to and including the midpoint.

The following is a brief description of the economic benefits determined for each MSA in this analysis:

**Increased human capital.** The findings on human capital demonstrate the percentage of new graduates who will pursue a postsecondary program or degree.<sup>5</sup> The calculation of this benefit was based on the educational attainment rates of adults living in the individual metro areas. An adjustment to these MSA-level educational attainment rates was made to account for the recognition that students who are likely to drop out of high school are also likely to have more limited access to the opportunities and resources necessary to embark on postsecondary education than the average student.

**Increased wages.** The findings on increased wages demonstrate the additional combined annual income that new graduates would earn as a result of completing high school. This benefit is calculated based upon the difference between their projected earnings given their expected final degree versus what they would likely earn as a high school dropout. Because individuals' earnings typically increase with additional years in the workforce, these figures represent the combined additional earnings at the midpoint of these students' careers.

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<sup>3</sup> It is important to note that some large urban districts have recently undergone large-scale high school reform efforts that may have resulted in significant changes to graduation rates since SY 2004–05.

<sup>4</sup> It is possible and likely that a small number of students who failed to graduate on time with the Class of 2008 will go on to earn a diploma later. However, due to data limitations, the EPE figure is the best available estimate of the number of dropouts from a single class in a particular MSA.

<sup>5</sup> This finding only predicts the percentage of new graduates who will embark on a postsecondary degree or program and does not reflect the proportion of graduates who will complete those efforts with a degree or certificate.



**Additional spending and investment.** Together, these figures represent the likely amount of combined additional disposable income available to new graduates given their increased wages in the average year. This disposable income is assumed to be either spent or invested. Predicted values of spending and investment are calculated based on individual spending and investment patterns in each local economy.

**Increased home and auto sales.** These figures demonstrate the likely increase in new graduates' spending on home and vehicle purchases given their increased wages. Increased home sale values reflect the cumulative increase in dollars spent on home purchases by new graduates by the time they reach the midpoint of their careers. This increase captures the likely value of homes purchased by new graduates who likely would not have purchased a home had they not earned a diploma, as well as the additional dollar amount spent on homes purchased by the small number new graduates who likely would have purchased a home even without a diploma. Values of increased auto sales reflect the additional dollar amount likely to be spent on vehicle purchases—new or used—by new graduates in the average year given their increased wages.

**Job and economic growth.** All of the increased spending and investment described above generate income and further employment opportunities within the region. Therefore, findings on job growth reflect the cumulative number of additional jobs supported by increased spending and investment by the midpoint of new graduates' careers. Findings on the contribution to the gross regional product (GRP) of these areas demonstrate the cumulative increase to the GRP made by these new graduates by the midpoint of their careers.

**Additional state and local tax revenue.** By earning higher incomes and spending and investing more dollars than they would have had they dropped out, new graduations will likely face larger state and local property, income, and sales tax bills. The findings on additional tax revenue represent the additional revenue at the midpoint of the students' careers and are calculated using the current tax rates of the primary cities within the MSAs and the states in which those primary cities are located.

**Describing regional high schools.** Fact sheets providing data on the economic benefits of reducing the dropout rate for *all* students also includes information on an MSA's high schools. The counts of high schools that fall within each MSA were found using the National Center for Education Statistics' (NCES) Common Core of Data MSA-level data tool for SY 2006–07—the most recent year for which this data was available. School counts represent the number of regular high schools, as defined by NCES.<sup>6</sup> To be included in the count, schools must have had “membership” during SY 2006–07, i.e., they enrolled at least one student that year.

The nation's lowest-performing high schools—also referred to as dropout factories—are identified by researchers at the Johns Hopkins University Center for the Social Organization of Schools. Schools are identified as such if their promoting power ratio is less than 60 percent. A promoting power ratio is a proxy for a school's graduation rate that demonstrates the percentage of incoming freshmen who progress to their senior year three years later. Due to the nature of school enrollment data, which serves as the basis for promoting power calculations, the count of schools within an MSA whose promoting power ratios fall below 60 percent is likely to have a small margin of error. Therefore, the figures presented here are not intended to serve as an exact count, but rather as a good indicator of the number of the nation's lowest-performing high schools within that metro region.<sup>7</sup>

**For more information.** To view the fact sheets and read answers to frequently asked questions about this analysis, visit [http://www.all4ed.org/publication\\_material/EconMSA](http://www.all4ed.org/publication_material/EconMSA). Further questions can be directed to [localbenefits@all4ed.org](mailto:localbenefits@all4ed.org).

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<sup>6</sup> NCES defines a high school as a school that serves grade 12 and any lower grades 7 and up.

<sup>7</sup> The Everyone Graduates Center, located within the Center for the Social Organization of Schools, provides more information about the calculation and limitations of promoting power ratios on its website [www.every1graduates.org](http://www.every1graduates.org).

