

Education and the Economy:

Boosting the Nation's Economy

by Improving High School Graduation Rates



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Technical Notes

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

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

The Alliance is continuously working to add important new information to further the national conversation about the impact of education on the nation's economy. To date, the Alliance has released findings for the economic benefits of reducing the dropout rate among all students in over 220 metropolitan statistical areas (MSA), in each state and the District of Columbia, and in the nation as a whole. The Alliance also released findings for the economic benefits of reducing the dropout rate specifically among *students of color and native students* nationally and in each state.

About the analysis. To conduct the analysis, the Alliance used an 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 states and U.S. Census-defined MSAs¹ based on an increase in the number of local students who graduate from high school. It pulls from 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 states and MSAs to estimate the contributions that would-be dropouts in these scenarios—referenced below and elsewhere as “new graduates”—would likely have on state economies (for state analyses) and on local economies (for MSA analyses) by earning high school diplomas with their peers. The majority of the data included in the economic model is state- and/or MSA-specific; therefore, the analyses yielded results tailored to each geographic area.

These analyses are intended solely to project the likely *gross* benefits to state and local economies. They do not reflect *net* impacts of additional graduates; that is, they do not factor in the costs of interventions necessary to yield higher graduation rates.

Calculating new graduates. To calculate findings based on cutting the number of students who dropped out from the Class of 2010 in half, the Alliance utilized state- and MSA-level dropout counts estimated by Editorial Projects in Education's (EPE) Research Center, a division of the nonprofit organization that publishes *Education Week*. Using state-reported², district-level data from the National Center for Education Statistics (NCES), EPE calculates the Cumulative Promotion Index—a widely accepted method for calculating high school graduation rates—for all regular, public school

¹ A U.S. Census-defined MSA consists of a central urban area and its surrounding counties that have strong social and economic ties to that area.

² Arkansas and the District of Columbia did not report data disaggregated by student subgroups for the class of 2007; therefore, neither are included in the analysis of the economic benefits of graduating more students of color and Native students. Utah reported disaggregated data, but the size of each subgroup did not meet NCES's threshold for public release; therefore, Utah is also excluded from the analysis.



districts that fall within each state and MSA.³ These district-level graduation rates are aggregated to yield state- and MSA-level graduation rates, respectively. Due to a lag in data reporting, the most recent graduation rates available for this analysis were for the Class of 2007. Thus, it is assumed that the Class of 2010 has a graduation rate similar to that of the Class of 2007. In most cases, this assumption will not result in significant inaccuracies; graduation rates for most districts typically change by only a fraction of a percentage point each year.⁴

Based on the total number of Class of 2010 ninth-grade students enrolled during School Year (SY) 2006–07, these state- and 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 2010.⁵

This methodology was used to calculate the number of dropouts overall and for each racial and ethnic subgroup.

Calculating economic benefits. The economic model produces conservative estimates of a given number of new graduates' economic contributions to a state or 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, high school graduates are assumed to remain in the workforce for forty-five years, receiving increased earnings each year. 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.

Economic factors projected for each state or MSA:

Increased human capital. The findings for human capital demonstrate the percentage of new graduates who will likely pursue a postsecondary credential, as well as the number and percentage of new graduates who will likely complete a postsecondary program or degree.⁶ The calculation of this factor is based on the educational attainment rates of adults living in each state or MSA. An adjustment to these educational attainment rates is made to account for the recognition that a student who is likely to drop out of high school is also likely to have less access to the opportunities and resources necessary to embark on postsecondary education than the average student.

Increased wages. The findings for increased wages demonstrate the additional combined annual income that new graduates would likely earn as a result of completing high school. This factor is calculated based upon the difference between their projected earnings given their expected final degree and what they would likely earn as a high school dropout. Projected earnings by education level are based on the average earnings by education level in each state or MSA. 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.

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 an average year. This disposable income is assumed to be either spent or invested. Predicted values of spending and investments are calculated based on individual spending and investment patterns in each state or local economy.

³ Prior to SY 2006–07, NCES classified New England school districts using New England City and Town Areas (NECTA) instead of by MSA. Because of this change, the number of Class of 2010 dropouts estimated for New England metro areas included in this analysis may be significantly different from the number of dropouts from previous classes estimated in previous analyses because the geographic area within which dropouts were counted has changed.

⁴ 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 2006–07.

⁵ It is likely that a small number of students who failed to graduate on time with the Class of 2010 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 state or MSA.

⁶ For this analysis, a postsecondary degree or certificate includes vocational certificates, two-year degrees, and bachelor's degrees or higher.

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 those new graduates who are not likely to purchase a home without a diploma, as well as additional dollars 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 dollars 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 investments described above generate income and further employment opportunities within the region. Therefore, findings for job growth reflect the cumulative number of additional jobs likely to be supported by increased spending and investment by the midpoint of new graduates' careers.⁷ Findings for the contribution to the gross state product (GSP) or gross regional product (GRP) of these areas demonstrate the cumulative increase to the GSP or GRP likely to be made by these new graduates by the midpoint of their careers. These figures are based on several unique characteristics of each state or local economy that determine the extent to which this “ripple effect” of increased spending and investments will continue generating additional benefits.

Additional state and local tax revenues. By earning higher incomes and spending and investing more dollars than they would have had they dropped out, new graduates will likely face larger state and local property, income, and sales tax bills. State-level findings represent the additional state tax revenues projected at the midpoint of the students' careers and are calculated using current state tax rates. MSA-level findings represent the sum of expected additional state and local tax revenues 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 state and regional high schools. The state and MSA profiles providing data on the economic benefits of reducing the dropout rate for *all* students also includes information on high schools within the states and MSAs. The counts of high schools within each state or MSA came from the NCES Common Core of Data tool for SY 2008–09—the most recent year for which this data is currently available. School counts represent the number of regular high schools, as defined by NCES.⁸ To be included in the count, schools must have had “membership” during SY 2008–09, 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 Everyone Graduates Center at Johns Hopkins University Center. Schools are identified as such if their three-year average 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. The average is taken from SYs 2005–06, 2006–07, and 2007–08. Due to the nature of school enrollment data, which serves as the basis for promoting power calculations, MSA-level counts of schools whose three-year average 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.⁹

For more information. To view the state or MSA profiles and read answers to frequently asked questions about the state-level or MSA-level analysis, visit http://www.all4ed.org/publication_material/Econ. Please direct further questions to localbenefits@all4ed.org.

⁷ Findings on job growth are not reported for MSAs where the projection is less than fifty jobs.

⁸ NCES defines a high school as a school that serves grade twelve and any lower grades seven and up.

⁹ The Everyone Graduates Center provides more information about the calculation and limitations of promoting power ratios on its website, www.every1graduates.org.