Georgia Department of Education
Charter School Division

Technical Overview
2012, 2013, 2014, and 2015 Beating the Odds

Data Sources

To complete the *Beating the Odds* analysis, an annual unique cross-sectional dataset is created using information from the College and Career Ready Performance Index (CCRPI), the Governor's Office of Student Achievement's Report Card, and the Georgia Department of Education's Student Record. Data are matched across data sources using the unique concatenation of system ID and school ID variables that are captured within each of the databases.

The primary outcome variable, CCRPI Single Score, is extracted from the Georgia Department of Education's Accountability website. Outcome variables are extracted after the official release of the CCRPI and results are signed-off by the Georgia Department of Education's Accountability staff. *Beating the Odds* uses the CCRPI Single Score without Challenge points. For schools that do not span grade clusters, this score is the Single Score minus Challenge points. For schools that span grade clusters, this score is the weighted average based on enrollment of each grade cluster's CCRPI score without Challenge points. Enrollment by grade cluster is provided by the Georgia Department of Education's Accountability Division.

The enrollment number represents the number of K-12 students enrolled at the school during the October FTE count. This information is from the Governor's Office of Student Achievement's Report Card, as provided by the Georgia Department of Education.

The grade cluster information is based on grades served, as listed on the CCRPI. Schools are classified into one of the following grade clusters: elementary only, elementary and middle, middle only, middle and high, high only, K-12, and primary.[1] The elementary only cluster serves as the reference category.

The churn rate is calculated by the Governor's Office of Student Achievement, based on data from the Georgia Department of Education's Student Record. The churn rate measures the number of student entries and exits during the school year divided by the number of students in the school on the Georgia Department of Education's fall count date.

Demographic information is provided by the Georgia Department of Education and includes information on full academic year (FAY) students only, as defined by the CCRPI. BTO includes the percentage of students by race/ethnicity: Asian/Pacific Islander, Black, Hispanic, Multi-racial, Native American and White. The percentage of students who are White serve as the reference category. The model also includes the percentage of students with disability, the percentage of English Language Learners, and the percentage of students who qualify for free or reduced-price lunch (FRL). For 2014 and 2015 BTO, the model also includes a variable that indicates whether the school participated in Provision 2 of the Special Assistance Alternatives (SAS) or the Community Eligibility Provision (CEP), as provided by the Georgia Department of Education's School Nutrition Program.[2] The percentage FRL is recoded to equal 100% for

[1] In 2015, primary schools did not receive a CCRPI score and therefore are not included in this analysis.
[2] In 2014, the U.S. Department of Agriculture expanded the National School Lunch Program through the Community Eligibility Provision to allow significantly more schools to provide free meals to students and no longer collect income eligibility information. This expansion resulted in schools that previously had less than 100% FRL be listed as 100%. The added CEP/SAS variable allows the model to differentiate between schools with 100% FRL

all CEP and SAS schools since these schools do not have to collect lunch eligibility information from parents and instead are allowed to report 100% FRL, even though not all students meet the income requirements.

Analytical Technique

Beating the Odds is estimated through the functional forms below. To control for heterogeneity of error, this analysis utilizes a robust standard error approach.[3]

CCRPI Single Score without Challenge Points =

$\beta_0 + \beta_1$*(Demographic percentages) + β_2*(Enrollment count) + β_3*(Grade cluster) + β_4*(SAS/CEP) + β_5*(Churn rate) + ε

Estimation & Post-estimation Strategy

To calculate the predicted CCRPI score without Challenge points, the following approach was used. Specifically, a linear prediction from the fitted regression model is specified as:

$$\hat{y}_j = b_1 x_{1j} + b_2 x_{2j} + \cdots + b_k x_{kj}$$

such that $x_{1j}, x_{2j}, \ldots, x_{kj}$ are obtained from the actual reported school-level data.

After producing the predicted score, *BTO* estimates a 95% confidence interval to determine whether the predicted CCRPI score is statistically different from the actual CCRPI. The following approach is used to generate the BTO category under each model:

1. Generate the predicted scores using the approach described above.
2. Calculate the standard error of the prediction for each school.
3. Calculate the upper bound of the confidence interval by adding the product of 1.96 (z-score for the 95th percentile) and the predicted standard error to the predicted score.[4]

Schools then receive one of the two following designations for each model:

1. Beat the Odds: If a school's actual CCRPI single score is greater than the upper bound of the 95% confidence interval

2. Did Not Beat the Odds: If a school's actual CCRPI score is less than or equal to the upper bound of the 95% confidence interval."

without CEP participation and 100% with CEP participation. Schools that were already participating Special Assistance Alternatives (SAS), which also allows schoolwide free meals, had actual FRL percentages close to 100%. For more information on the Community Eligibility Provision change, click here.

[3] For 2012 and 2013, the CEP/SAS variable was not included because it was prior to the expansion of the Community Eligibility Provision, as discussed in Footnote 1.

[4] Predicted scores and upper bounds of the confidence interval that are greater than 100 are changed to equal 100. Predicted scores less than 0 are changed to equal 0.