Public School Grade Retention Rates in the United States:
Estimates by State, Grade, Year, and Race/Ethnicity

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ABSTRACT

Being made to repeat a grade in school is one of the strongest predictors of subsequent educational, social, and developmental outcomes. What is more, unlike almost all other strong predictors of outcomes like high school dropout or mental health, grade retention is the result of intentional policies that are under the immediate control of school personnel. Despite all of this, we know exceptionally little about the rate at which American students are made to repeat grades (especially at the state level). In this paper, we describe a new technique for estimating the national and state-level rates at which American public elementary school students are made to repeat grades. We will produce estimates by grade of enrollment; by state and race/ethnicity; and for multiple academic years. Our state estimates are extremely highly correlated (r=0.92) with credible rates published by the handful of states with strong longitudinal student tracking systems.

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Being made to repeat a grade in school is one of the strongest predictors of subsequent educational, social, and developmental outcomes. It is an important determinant of emotional and mental well-being among adolescents, and is perhaps the single best predictor of high school completion. Unlike virtually all other strong predictors of outcomes like high school dropout or mental health, grade retention is the result of intentional policies that are under the immediate control of school personnel. From a practical and political point of view, it is nearly impossible to improve educational or developmental outcomes by reducing economic inequality or enhancing parenting skills. In contrast, grade retention policies can be directly manipulated.

Despite all of this, we know exceptionally little about the rate at which American students are made to repeat grades. This is especially true at the state level—and states typically control grade retention policies. While we have limited evidence about national retention rates (and even that information comes from parents' reports in sample surveys), we have even less information about states' grade retention rates.

In the final version of this paper (to be presented at PAA), we describe a new technique for estimating the national and state-level rates at which American public elementary school students are made to repeat grades. We produce estimates at the national and state levels for Grades 1 through 8, and we produce national estimates by race/ethnicity. Finally, we produce estimates for the 2000 through 2006 academic years. We are able to validate our state-level estimates by comparing them to rates published by the handful of states that use longitudinal student tracking systems to monitor student retention.

EXISTING ESTIMATES

There are currently five ways to estimate grade retention rates, three of which apply (with any degree of reliability) only to the U.S. as a whole and not to states.

First, the National Household Education Surveys (NHES)—a set of household-based surveys conducted approximately every other year between 1991 and 2007—has sometimes included questions for parents about whether their children have repeated grades in school. However, the NHES sample size and design is such that only national and regional estimates can be produced. Beyond this, the information collected is generally sufficient only to assess whether children have *ever* been made to repeat a grade, not whether they repeated a particular grade.

Second, the October Supplement to the Current Population Surveys (CPS)—a household-based survey of about 50,000 households each year in which overlapping panels of respondents participate in two consecutive Octobers—provides two ways of measuring grade retention. In some years, respondents (usually the head of the household) are asked whether school-age children have ever repeated a grade and, if so, which grade(s) they repeated. In addition, because households participate in the October CPS in each of two consecutive years and because current grade of enrollment is collected for all enrolled household members each year, it is possible to observe directly whether students are enrolled in the same grade in both years. Like the NHES, the size of the CPS samples is such that it is impossible to generate state-level estimates of grade retention using these data. Furthermore, because CPS data files are so technically difficult to link across years (i.e., from one October to the next), few researchers have ever estimated grade retention rates by directly comparing grade of enrollment across adjacent years.

The NHES and CPS share one other limitation for the purposes of estimating grade retention rates: Those estimates are based on parents' self-reports of their children's educational histories. To our knowledge, there has never been an effort to establish the reliability or validity of these self-reports. Parents presumably know about their children's educational experiences, but (1) may not label past events as "grade retention" or (2) may not be willing to report grade retention because of social desirability biases. For example, Warren and Halpern-Manners (2007) showed that CPS respondents systematically misreport the enrollment status of high school-age children, and they suggest that this has to do with parents' inability or unwillingness to recognize that their children have dropped out of school.

Third, it is possible to generate national-level grade retention estimates using data from longitudinal surveys of adolescents or students. For example, the Early Childhood Longitudinal Study—fielded by the U.S. Department of Education—followed a cohort of kindergartners forward from 1998 through eighth grade. For the 25,000 or so participants in this study, we can observe the percentage who repeated each grade. The size of these longitudinal studies is such that grade retention cannot be measured reliably at the state level. Perhaps more importantly, attrition from these panel studies may be correlated with students' chances of repeating grades. Finally, such studies are conducted infrequently (because of their great expense). It is not possible to use these resources to produce annual estimates, even at the national level.

Fourth, a number of researchers have estimated grade retention rates at the national and state levels by calculating one of two quantities: the percentage of children who are enrolled in a grade that is below the modal grade for their age ("below modal grade for age") or the percentage of enrolled students in a grade who are above the modal age for their grade ("above modal age for grade"). For example, most first graders are six or seven and most seven year olds are enrolled in first or second grade. One might estimate the first grade retention rate by computing the percentage of first graders who are eight or older. One might also estimate grade retention among seven year olds by calculating the percentage of seven year olds who have not yet enrolled in first grade. In the U.S., both of these quantities can readily be calculated using data from the decennial census, the American Community Surveys (ACS), or the CPS. Using census or ACS data, it is possible to produce reliable estimates at the state level.

Unfortunately, both "below modal grade for age" and "above modal age for grade" are flawed measures of grade retention. One problem is that there are multiple modal ages for each grade (and multiple modal grades for each age). A seven-year-old first grader may or may not have been retained in grade—they may have started first grade as a six year old and then been made to repeat the grade, or they may have started first grade as a seven year old. However, a seven-year-old first grader would never be counted as retained using "below modal grade for age" and "above modal age for grade." Another is that all children who start school late (that is, after the modal age for beginning formal schooling) are counted as having been retained. Finally, both of these measures are actually measures of whether children have *ever* been retained in their educational careers. That is, neither measure tells us the grade or age at which retention occurred. Studying change from year to year may provide some information in this regard, but only inexactly. In the end, the information derived from these estimates is only imprecisely related to retention rates in specific grades and specific locales.

Fifth, a number of states publish the grade-level-specific rate at which public school students in their jurisdiction are made to repeat grades. In recent years, some states have based these rates on longitudinal tracking systems that follow individual students over time and provide presumably very accurate information about the percentage who repeat grades. Although they are (at least in theory) very accurate measures, they are limited in a few important respects. They are only available for a handful of states, and they are generally not disaggregated by race/ethnicity or other student attributes. They may or may not be calculated the same way across states, and they are usually available only for a few recent years.

In the end, national level estimates are based either on parents' self-reports (which are of unknown quality), on less precise measures of lifetime experiences with grade retention like "below modal grade for age," or on information from infrequently conducted longitudinal studies of adolescents (which suffer from non-random attrition). At the state level, estimates are based either on concepts like "below modal grade for age" or on states' own reports of their grade retention rates (which are only available for a handful of states, and then only for recent years).

We cannot understand the predictors, correlates, or consequences of grade retention unless we can measure accurately and reliably how often it occurs. Because grade retention is a public policy controlled at the state level, it is imperative that we measure it at the state level. Furthermore, we contend that measures that assess whether young people have *ever* been made to repeat a grade are less useful than measures of how often students are made to repeat specific grades. The technique that we describe below allows for national and state-level estimates of grade-specific retention rates. We calculate these rates for multiple years and (at the national level) by race/ethnicity. As described below, our state-level estimates are very highly correlated (r=0.9 or higher) with rates reported by the states themselves.

RESEARCH DESIGN

Our method for estimating grade retention rates is based on two observations: (1) all students are at risk of being retained in grade at the end of the school year and (2) the set of students enrolled in any grade consists of one group students who are enrolled in that grade for the first time and another group of students who were also enrolled in that grade the previous academic year. Our grade retention estimates consist of a simple ratio. In the numerator of that ratio is the number of students enrolled in Grade X in Year Y+1 who were also enrolled in Grade X in Year Y. In the denominator is the total number of students enrolled in Grade X in Year Y. Of the students enrolled in Grade X in Year Y, what percentage was still enrolled in Grade X in Year Y+1? For Grade X and academic year Y, define the retention rate, $RR_{X,Y}$ as:

$$RR_{X,Y} = \frac{\#\ Repeating\ Grade\ X\ in\ Year\ Y{+}1}{\#\ Enrolled\ in\ Grade\ X\ in\ Year\ Y} \qquad (1)$$

The number of public school students enrolled in Grade X in Year Y—that is, the denominator above—is readily obtained from the U.S. Department of Education's Common Core of Data (CCD) for Grades X=1 through 12 and Years Y=1986 (or earlier) through 2006. CCD enrollment figures are based on states' administrative reports of how many students are enrolled in each grade in their public schools. On the other hand, there is no direct way to distinguish students who are repeating Grade X in Year Y+1 from those who are enrolled in Grade X for the first time in Year Y+1. .

If we knew the grade retention rate for Grade X-1 in Year Y (call it $RR_{X-1,Y}$), then calculating $RR_{X,Y}$ would be simple. It would equal:

$$RR_{X,Y} = \frac{\#\,Enrolled\ in\ Grade\ X\ in\ Year\ Y{+}1 - \left(\left(1 - RR_{X-1,Y}\right) \times \#\,Enrolled\ in\ Grade\ X{-}1\ in\ Year\ Y \right)}{\#\,Enrolled\ in\ Grade\ X\ in\ Year\ Y}. \qquad (2)$$

The second half of the numerator in Equation 2 … (1- $RR_{X-1,Y}$) × # Enrolled in Grade X-1 in Year Y … equals the number of students in Grade X in Year Y+1 who are enrolled in Grade X for the first time in Year Y+1 (because they were promoted out of Grade X-1 in Year Y). This means that if we know $RR_{X-1,Y}$ and have access to the number of students enrolled in Grade X in Year Y, Grade X in year Y+1, and Grade X-1 in Year Y, then we know $RR_{X,Y}$. Put another way, *if we know the grade retention rate in first grade for one academic year, then we also know the retention rate in all subsequent grades in that same year* (at least up through grades in dropping out of school begins to occur).

How do we estimate the grade retention rate in Grade 1? Conceptually, we wish to estimate a quantity similar to that presented in Equation 2. That is, we want to estimate the number of first graders who are repeating Grade 1 in Year Y+1 and then divide that by the total number of Grade 1 students in Year Y. How do we accomplish this? As in Equation 2, we estimate the number of Grade 1 students who are repeating Grade 1 in Year Y+1 by subtracting the number of *first time* Grade 1 students in Year Y+1 from the *total* number of first graders in Year Y+1:

$$RR_{1,Y} = \frac{(\#\,Enrolled\ in\ Grade\ 1\ in\ Year\ Y{+}1) - (\#\,Enrolled\ in\ Grade\ 1\ \boldsymbol{for\ the\ First\ Time}\ in\ Year\ Y{+}1)}{\#\,Enrolled\ in\ Grade\ 1\ in\ Year\ Y}. \qquad (3)$$

How do we estimate the number of first time Grade 1 students? We assume that the number of first time Grade 1 students in a geographic area equals the number of 6 year olds who live in that area. All children are required to attend school; they begin first grade for the first time only once in their lives.[1] That is, Equation 3 becomes:

$$RR_{1,Y} = \frac{(\#\,Enrolled\ in\ Grade\ 1\ in\ Year\ Y{+}1) - (\#\,of\ 6\ Year\ Olds\ in\ Year\ Y{+}1)}{\#\,Enrolled\ in\ Grade\ 1\ in\ Year\ Y}. \qquad (4)$$

[1] We might have used the number of 5 or 7 year olds, or some average of the number of 5 through 7 year olds, instead. It makes only a minor difference for our estimates; however, as described below, estimates using the number of 6 year olds more closely reproduce state-reported rates.

Estimates of the number of 6 year olds (and people of all single years of age) for each state are produced by the U.S. Census Bureau.

The enrollment figures used in Equation 4 (for first grade retention rates) and in Equation 2 (for second grade and beyond) come from the Common Core of Data and pertain only to public school students. The estimated number of 6 year olds pertains to all 6 year olds, regardless of whether they attend public or private schools. Consequently, in practice, we adjust the number of 6 year olds in each state to account for the number who are attending private schools. Specifically, we estimate the number of first graders who attend private school in Year X in each state using data from the U.S. Department of Education's Private Schools Survey (PSS). By combining first grade enrollment counts for Year X from the CCD (for public schools) and the PSS (for private schools), we can calculate the proportion of first graders who attend private schools in each state. We then deflate the count of 6 year olds accordingly.

PROGRESS TO DATE

Using 2005 and 2006 CCD data, 2005 and 2007 PSS data, and Census Bureau estimates of the number of 6 year olds in 2006, we have calculated retention rates at the end of the 2005-06 academic year for Grades 1 through 3 for each state; we have also summed relevant portions of the estimates to produce national estimates for Grades 1 through 3 for the 2005-06 school year. These estimates are described below.

By the time we present our paper at PAA we will also have done the following:

1. Extend the estimates for 2005-06 through Grade 6 (or possibly Grade 8)
2. Produce national estimates for 2005-06 by race/ethnicity. The PSS does not provide grade-specific estimates of the number of enrolled private school students, and the Census Bureau does not readily provide estimates of the number of 6 year olds by race/ethnicity. We will have to estimate both quantities from the ACS.
3. Use identical methods to produce annual estimates for 1996 through 2004-05.

RESULTS TO DATE

In Table 1 we reports three sets of figures for Grades 1 through 3 in the U.S. and in each state. In the left-most columns, we report figures calculated as per Equation 4 (for Grade 1) and Equation 2 (for Grades 2 and 3). These are our "calculated rates." In the middle set of columns we provide grade retention rates as provided by states (usually on their web sites).

In Figure 1, and separately for each grade, we show scatter plots with states' reported rates on the y axis and out calculated rates on the x axis. In each of the three figures, we draw a trend line based on an OLS regression. For each grade, the correlation between our calculated rates and states' reported rates exceeds 0.90. Consequently, our calculated rates explain 85% or more of the variation in states' rates. The intercepts of each of the regression lines are near zero—indicating that when our calculated rates are extremely low, states' reported rates tend to be very low. The slopes of these regression lines are positive and large; we it not for random error variance in our calculated rates (resulting from random errors in CCD, PSS, and Census Estimate data), we suspect that they would be close to 1.0. Indeed the fact that the slopes decline across grades is because the (random error prone) grade retention estimates for Grade X are used in calculating that rate for Grade X+1; the error compounds across years.

Because the slopes in Figure 1 differ from 1.0, our calculated rates are not on the same metric as states' reported rates. So, we have used the intercept and slope of each regression line to calculate state-specific predicted values—which we can do for every state and the country as a whole.

The right-most columns of Table report the predicted values from these regression estimates. **These are our best estimates of the grade retention rate in each state and in the country as a whole for Grades 1 through 3 at the end of the 2005-06 academic year.**

In Table 2, we rank states by their grade retention rates, separately for Grades 1, 2, and 3.

Table 1. Grade Retention Rates for Grades 1 through 3, End of 2005-06 School Year

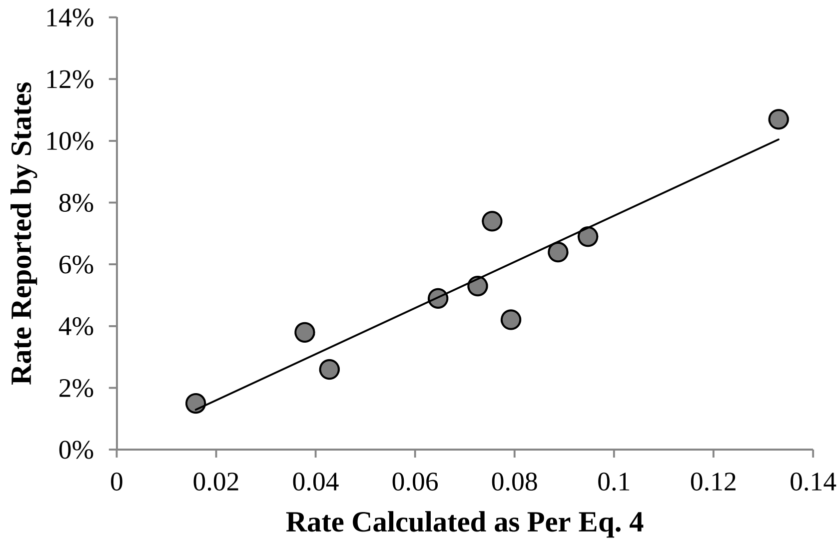
	Rates as Per Equations 2 (Gr. 1) & 4 (Gr. 2 & 3)			Rates Reported by States			**Final Estimates**: Predicted Values		
	Gr. 1	**Gr. 2**	**Gr. 3**	**Gr. 1**	**Gr. 2**	**Gr. 3**	**Gr. 1**	**Gr. 2**	**Gr. 3**
United States	5.4%	2.8%	2.6%				4.2%	2.1%	1.6%
Alabama	8.7%	4.1%	2.5%				6.6%	3.0%	1.6%
Alaska	8.8%	7.5%	4.7%				6.7%	5.2%	2.9%
Arizona	0.0%	0.7%	2.5%				0.1%	0.8%	1.5%
Arkansas	6.5%	2.4%	2.0%	4.9%	2.1%	1.4%	4.9%	1.9%	1.2%
California	6.9%	3.0%	1.2%				5.3%	2.3%	0.8%
Colorado	3.6%	2.6%	2.8%				2.8%	2.0%	1.7%
Connecticut	6.3%	3.2%	2.5%				4.8%	2.4%	1.5%
Delaware	7.5%	3.7%	4.6%	7.4%	3.8%	2.8%	5.7%	2.7%	2.8%
Dist. of Columbia	14.6%	1.9%	0.0%				11.0%	1.6%	0.0%
Florida	9.5%	5.5%	6.4%	6.9%	4.3%	6.8%	7.2%	3.9%	3.9%
Georgia	4.5%	3.6%	6.2%				3.5%	2.7%	3.7%
Hawaii	9.1%	6.0%	3.3%				6.9%	4.2%	2.0%
Idaho	2.9%	3.8%	5.1%				2.3%	2.8%	3.1%
Illinois	3.1%	1.9%	2.7%				2.4%	1.6%	1.7%
Indiana	6.9%	3.5%	2.2%				5.2%	2.6%	1.4%
Iowa	2.5%	2.6%	2.6%				2.0%	2.0%	1.6%
Kansas	3.4%	0.0%	0.0%				2.7%	0.3%	0.0%
Kentucky	3.7%	0.0%	6.1%				2.9%	0.3%	3.7%
Louisiana	13.3%	7.1%	7.5%	10.7%	5.0%	5.0%	10.0%	4.9%	4.5%
Maine	2.7%	2.6%	3.5%				2.1%	2.0%	2.1%
Maryland	0.0%	0.1%	0.3%				0.1%	0.4%	0.2%
Massachusetts	3.8%	1.4%	1.2%	3.8%	1.8%	1.2%	2.9%	1.3%	0.8%
Michigan	4.1%	0.6%	0.0%				3.2%	0.7%	0.0%
Minnesota	2.4%	2.0%	2.3%				1.9%	1.6%	1.4%
Mississippi	11.9%	4.6%	2.2%				9.0%	3.3%	1.4%
Missouri	2.6%	1.5%	1.9%				2.0%	1.3%	1.2%
Montana	2.4%	0.6%	2.3%				1.9%	0.7%	1.4%
Nebraska	4.2%	2.9%	2.4%				3.2%	2.2%	1.5%
Nevada	3.1%	4.4%	5.5%				2.4%	3.2%	3.3%
New Hampshire	5.9%	2.0%	1.4%				4.5%	1.6%	0.9%
New Jersey	6.7%	3.3%	2.0%				5.1%	2.4%	1.3%
New Mexico	1.5%	0.7%	1.6%				1.2%	0.8%	1.0%
New York	2.5%	0.0%	0.0%				2.0%	0.3%	0.0%
North Carolina	7.3%	5.2%	5.0%	5.3%	2.9%	2.4%	5.5%	3.7%	3.1%
North Dakota	0.0%	0.0%	0.2%				0.1%	0.3%	0.2%
Ohio	4.3%	1.2%	0.9%	2.6%	0.9%	1.1%	3.3%	1.1%	0.6%
Oklahoma	11.7%	2.0%	1.5%				8.9%	1.7%	0.9%
Oregon	0.1%	0.2%	1.3%				0.2%	0.4%	0.8%
Pennsylvania	4.8%	3.0%	3.2%				3.7%	2.3%	2.0%
Rhode Island	0.0%	0.0%	0.0%				0.1%	0.3%	0.0%
South Carolina	4.9%	2.6%	2.6%				3.8%	2.0%	1.6%
South Dakota	0.0%	0.0%	0.0%				0.1%	0.3%	0.0%
Tennessee	8.3%	6.2%	6.6%				6.3%	4.3%	4.0%
Texas	8.9%	5.4%	4.4%	6.4%	3.7%	2.9%	6.7%	3.9%	2.7%
Utah	0.0%	1.9%	3.9%				0.1%	1.6%	2.4%
Vermont	1.2%	0.2%	1.0%				1.0%	0.4%	0.7%
Virginia	5.0%	3.2%	2.8%				3.8%	2.4%	1.7%
Washington	2.0%	1.9%	2.7%				1.6%	1.6%	1.7%
West Virginia	7.9%	3.0%	2.1%	4.2%	1.7%	0.9%	6.0%	2.3%	1.3%
Wisconsin	1.6%	1.5%	2.3%	1.5%	0.8%	0.6%	1.3%	1.3%	1.4%
Wyoming	2.9%	3.8%	6.0%				2.3%	2.8%	3.7%

Table 2. Rankings of State Grade Retention Rates for Grades 1 through 3, End of 2005-06 School Year

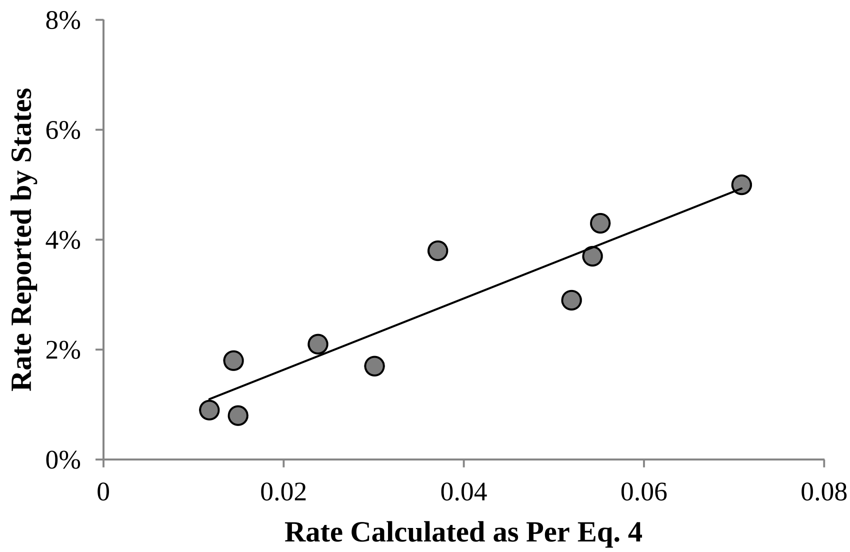
Grade 1			Grade 2			Grade 3		
	Rate	**Rank**		**Rate**	**Rank**		**Rate**	**Rank**
Dist. of Columbia	11.0%	1	Alaska	5.2%	1	Louisiana	4.5%	1
Louisiana	10.0%	2	Louisiana	4.9%	2	Tennessee	4.0%	2
Mississippi	9.0%	3	Tennessee	4.3%	3	Florida	3.9%	3
Oklahoma	8.9%	4	Hawaii	4.2%	4	Georgia	3.7%	4
Florida	7.2%	5	Florida	3.9%	5	Kentucky	3.7%	5
Hawaii	6.9%	6	Texas	3.9%	6	Wyoming	3.7%	6
Texas	6.7%	7	North Carolina	3.7%	7	Nevada	3.3%	7
Alaska	6.7%	8	Mississippi	3.3%	8	Idaho	3.1%	8
Alabama	6.6%	9	Nevada	3.2%	9	North Carolina	3.1%	9
Tennessee	6.3%	10	Alabama	3.0%	10	Alaska	2.9%	10
West Virginia	6.0%	11	Wyoming	2.8%	11	Delaware	2.8%	11
Delaware	5.7%	12	Idaho	2.8%	12	Texas	2.7%	12
North Carolina	5.5%	13	Delaware	2.7%	13	Utah	2.4%	13
California	5.3%	14	Georgia	2.7%	14	Maine	2.1%	14
Indiana	5.2%	15	Indiana	2.6%	15	Hawaii	2.0%	15
New Jersey	5.1%	16	New Jersey	2.4%	16	Pennsylvania	2.0%	16
Arkansas	4.9%	17	Virginia	2.4%	17	Virginia	1.7%	17
Connecticut	4.8%	18	Connecticut	2.4%	18	Colorado	1.7%	18
New Hampshire	4.5%	19	California	2.3%	19	Washington	1.7%	19
US Average	**4.2%**	n/a	Pennsylvania	2.3%	20	Illinois	1.7%	20
Virginia	3.8%	20	West Virginia	2.3%	21	**US Average**	**1.6%**	n/a
South Carolina	3.8%	21	Nebraska	2.2%	22	Iowa	1.6%	21
Pennsylvania	3.7%	22	**US Average**	**2.1%**	n/a	South Carolina	1.6%	22
Georgia	3.5%	23	Iowa	2.0%	23	Alabama	1.6%	23
Ohio	3.3%	24	Maine	2.0%	24	Arizona	1.5%	24
Nebraska	3.2%	25	South Carolina	2.0%	25	Connecticut	1.5%	25
Michigan	3.2%	26	Colorado	2.0%	26	Nebraska	1.5%	26
Massachusetts	2.9%	27	Arkansas	1.9%	27	Minnesota	1.4%	27
Kentucky	2.9%	28	Oklahoma	1.7%	28	Wisconsin	1.4%	28
Colorado	2.8%	29	Minnesota	1.6%	29	Montana	1.4%	29
Kansas	2.7%	30	New Hampshire	1.6%	30	Indiana	1.4%	30
Illinois	2.4%	31	Washington	1.6%	31	Mississippi	1.4%	31
Nevada	2.4%	32	Illinois	1.6%	32	West Virginia	1.3%	32
Wyoming	2.3%	33	Utah	1.6%	33	New Jersey	1.3%	33
Idaho	2.3%	34	Dist. of Columbia	1.6%	34	Arkansas	1.2%	34
Maine	2.1%	35	Missouri	1.3%	35	Missouri	1.2%	35
Missouri	2.0%	36	Wisconsin	1.3%	36	New Mexico	1.0%	36
Iowa	2.0%	37	Massachusetts	1.3%	37	Oklahoma	0.9%	37
New York	2.0%	38	Ohio	1.1%	38	New Hampshire	0.9%	38
Minnesota	1.9%	39	New Mexico	0.8%	39	Oregon	0.8%	39
Montana	1.9%	40	Arizona	0.8%	40	Massachusetts	0.8%	40
Washington	1.6%	41	Montana	0.7%	41	California	0.8%	41
Wisconsin	1.3%	42	Michigan	0.7%	42	Vermont	0.7%	42
New Mexico	1.2%	43	Vermont	0.4%	43	Ohio	0.6%	43
Vermont	1.0%	44	Oregon	0.4%	44	Maryland	0.2%	44
Oregon	0.2%	45	Maryland	0.4%	45	North Dakota	0.2%	45
Arizona	0.1%	46	Kansas	0.3%	46	Dist. of Columbia	0.0%	46
Maryland	0.1%	47	Kentucky	0.3%	46	Kansas	0.0%	46
North Dakota	0.1%	47	New York	0.3%	46	Michigan	0.0%	46
Rhode Island	0.1%	47	North Dakota	0.3%	46	New York	0.0%	46
South Dakota	0.1%	47	Rhode Island	0.3%	46	Rhode Island	0.0%	46
Utah	0.1%	47	South Dakota	0.3%	46	South Dakota	0.0%	46

Figure 1. Relationship Between State-Reported Grade Retention Rates and Calculated Grade Retention Rates, 2005-06

GRADE 1
r = 0.93
R^2 = 0.87
y=0.001+0.747*x



GRADE 2
r = 0.92
R^2 = 0.85
y=0.003+0.649*x



GRADE 3
r = 0.93
R^2 = 0.87
y=0.000+0.601*x