Indiana's High School Graduation Rate: A New Look at the Past Decade

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Indiana Chamber of Commerce

Research/Analysis:

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EXECUTIVE SUMMARY

Like many other states throughout the country, Indiana has struggled in recent years to develop a high school graduation reporting system and calculation method that reflect the true number of students who successfully complete a K-12 education. Today's officially reported rates – in Indiana and elsewhere – are widely recognized as inaccurate. The reasons for the inaccuracies vary, but in Indiana – like several other states – the primary culprit is under-reported dropout numbers.

Using a formula that relies heavily on the under-reported dropout numbers, Indiana has claimed steady increases in its graduation rate and a current graduation rate of nearly 90 percent. This report uses nine alternative calculation methods developed by various public policy organizations and individual researchers to overcome the widely recognized inaccuracies of dropout data and to produce a more accurate estimate of high school graduation rates.

While the results of these alternative formulas provide a range of graduation rate estimates, rather than a definitive answer to the issue, they do provide a picture of Indiana's graduation rates that differs significantly from the official rates reported by the Indiana Department of Education (IDOE). First, each of the calculations indicates that Indiana's graduation rate has been steadily *declining* for over a decade, not increasing as official IDOE reports have suggested. Second, when combined with data that are emerging from Indiana's new reporting and calculation methods, the simpler calculation methods may prove to be more accurate than those that have been adjusted in response to ongoing questions about the "9th grade enrollment bubble" or various migration patterns.

The impact of these new data is staggering when the rates are converted to actual counts of student dropouts. While official IDOE reports suggest that 6,292 members of the 2004-05 graduating class did not earn a high school diploma, the median of the alternative calculations puts that number more than three times higher – at 21,508. Over the last 12 years for which data are available, even the official IDOE rates suggest that nearly 100,000 students have left school without a high school diploma, while the mean of the alternative calculations puts that number close to one-quarter of a million.

The Indiana General Assembly has mandated a new reporting system for high school graduation rates that is just starting to be implemented and will produce more accurate graduation rate data beginning this fall. In the meantime, the IDOE has used proxy data to estimate that the current graduation rate is just 71 percent. More data will be needed to sort through the various calculation options presented in this report and to better understand Indiana's trend-line graduation rates at the school and district levels; but for now, this estimate suggests that the simpler calculation methods, which educators have criticized and dismissed in recent years, may actually produce the best estimate of Indiana's true graduation rates and dropout counts.

BACKGROUND AND OVERVIEW

Like many other states throughout the country, Indiana has struggled in recent years to develop a high school graduation reporting system and calculation method that reflect the true number of students who successfully complete a K-12 education. Today's officially reported rates – in Indiana and elsewhere – are widely recognized as inaccurate. The reasons for the inaccuracies vary, but in Indiana – like several other states – the primary culprit is under-reported dropout numbers.

Until this year, Indiana's graduation rate calculation used a "survival rate" snapshot approach, as represented by the following formula:

$$\text{Grad Rate} = \frac{E^9 - D^9}{E^9} \times \frac{E^{10} - D^{10}}{E^{10}} \times \frac{E^{11} - D^{11}}{E^{11}} \times \frac{E^{12} - D^{12}}{E^{12}}$$

E^9, E^{10}, E^{11}, E^{12} = Current enrollment in the 9^{th}, 10^{th}, 11^{th} & 12^{th} grades, respectively
D^9, D^{10}, D^{11}, D^{12} = Dropout count in the 9^{th}, 10^{th}, 11^{th} & 12^{th} grades, respectively

If used as intended, this formula would calculate the percentage of students remaining in school during any given school year. In theory, it would provide a reasonable estimate of the graduation rate, but it would not provide a rate for any particular graduating class, as many alternatives provide. In practice, the formula has been rendered useless due to under-reported dropout counts, which are critical to the accuracy of this particular formula.

Using this formula (including data-reporting standards that have changed over the years), the IDOE has reported the following graduation rates for Indiana:

TABLE 1: IDOE Official Statewide Graduation Rates

1987-88	76.6	1996-97	88.2
1988-89	75.7	1997-98	88.3
1989-90	78.1	1998-97	89.7
1990-89	81.1	1999-98	89.5
1991-92	82.5	2000-99	90.1
1992-93	83.5	2001-02	90.1
1993-94	82.6	2002-03	91.1
1994-95	82.7	2003-04	89.8
1995-96	86.4	2004-05	89.8

Source: Indiana Department of Education

To address problems with the current system, the Indiana General Assembly has mandated a new reporting system and calculation method that currently are being implemented. This new approach makes two primary changes: First, it utilizes a cohort-based formula that will produce graduation rates for each class of graduating students. Second, it requires school districts to track each student in the cohort and to count any departing student as a dropout unless the district can provide evidence that the student has left the district for other legitimate reasons.

This new reporting system relies on individual student identification numbers, which the state just began using four years ago; so the first cohort of students to be tracked under this system have just completed four years in high school. Since graduation counts for this class will not be available until later this fall, the Indiana Department of Education has used three years of data (freshman through junior years) along with a proxy calculation for the cohort's senior year to estimate a statewide graduation rate in 2005-2006. That estimate is 70.98 percent, substantially lower than any of the official rates that have been posted for the last two decades.

Department of Education officials have reported that they do not have the capability to extend the current calculation and reporting methods to previous years. Therefore, there is no official effort underway to determine accurate graduation rates for past years. Without these recalculations, the state will not know if graduation rates have been increasing or declining in recent years; nor will they know the pace of such change.

To determine Indiana's recent graduation rates and trendlines, researchers must rely on estimates calculated from available data. While dropout data are widely recognized as flawed, there remains much greater confidence in reported enrollment and graduation data. Thus, several researchers and public policy organizations have developed graduation rate formulas that rely on enrollment and graduation data, and ignore flawed dropout data. This briefing paper summarizes several of those approaches to produce various estimates and trendlines for Indiana's true graduation rate.

Additionally, this report uses the calculations produced by these various formulas to provide a better estimate of dropout counts in Indiana. Despite the common public understanding that dropout rates are the converse of graduation rates, Indiana's education policy leaders have regularly treated these two issues as distinctly different. This report relies on the various adjustments contained within each graduation rate formula to estimate real dropout counts, based on the converse of each formula's calculation of graduation rates.

INDIANA'S HIGH SCHOOL GRADUATION RATE

Basic Calculations

The simplest graduation formula compares graduation counts to 9th grade enrollments four years earlier:

$$\text{Grad Rate} = \frac{G_4}{E^9_1}$$

G_4 = Graduates in Year 4
E^9_1 = 9th Grade Enrollment in Year 1

This simplified formula is often criticized because it does not account for transfers into and out of the public schools. Thus, if a state's public schools are losing high school students for reasons other than dropping out – transfers out of state, transfers to non-public schools, etc. – this formula will produce a graduation rate that is less than reality. Conversely, for a state that experiences an increase in high school enrollment, this formula will produce a graduation rate that is greater than reality.

Additionally, some critics of this approach argue that 9th grade enrollment numbers are artificially inflated due to a "bubble" of students who have completed one year of high school but have not yet completed sufficient credits to be counted as 10th graders. This point is accentuated by the fact that 9th grade enrollment numbers at both state and district levels are consistently larger than 8th grade enrollment numbers for the same cohort of students. Yet, this point is tempered, at least in part, by consistent declines in private school enrollments from 8th to 9th grades, as private and home school students enroll in the public schools for their high school years.

Thus, the actual impact of the "9th grade bubble" remains unknown. Nonetheless, these unresolved questions have caused some researchers to modify their graduation rate formulas to account for the possible impact of this issue. The simplest of these modifications is to compare graduation counts to 8th grade enrollment for the same cohort of students, rather than 9th grade:

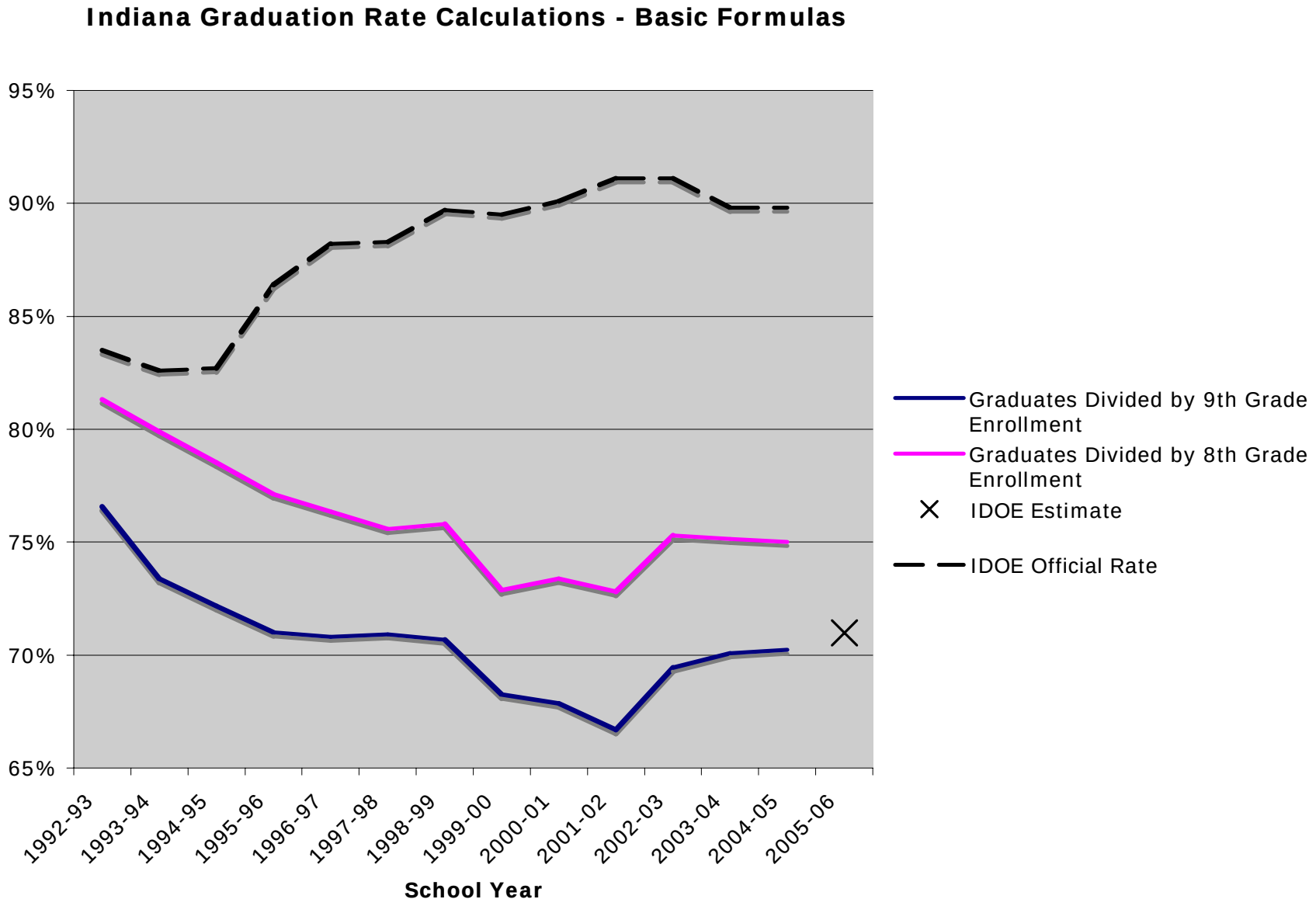
$$\text{Grad Rate} = \frac{G_5}{E^8_1}$$

G_4 = Graduates in Year 5
E^8_1 = 8th Grade Enrollment in Year 1

This formula assumes that the entire enrollment increase from 8th grade to 9th grade is the result of students who have entered their second years of high school without sufficient credits to be classified as 10th graders. It completely ignores the likely migration to public schools from non-public schools. Thus, the result is likely inflated; but by how much is still unknown.

Chart 1 plots the results for these two "basic" calculation methods, along with comparisons to the official Indiana rates and the IDOE estimate for 2005-2006, using new reporting standards.

Chart 1


Indiana Graduation Rate Calculations - Basic Formulas
95%
90%
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80%
75%
70%
65%
1992-93
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2002-03
2003-04
2004-05
2005-06
School Year
Graduates Divided by 9th Grade Enrollment
Graduates Divided by 8th Grade Enrollment
IDOE Estimate
IDOE Official Rate

Adjustments for Enrollment Growth & the Ninth-Grade Enrollment "Bubble"

Another common critique of the basic calculations is that they fail to account for in- and out-migrations of students. This is less of an issue at the aggregated statewide level, where shifts in population are typically offset as the result of families moving from one public school district to another public school district, both within the same state; but at a district or school level, family migrations can cause basic calculation methods to produce a deflated rate for districts that are losing students and an inflated rate for districts that are gaining students. Indeed, it is not uncommon that a basic calculation for quickly growing districts would produce obviously false graduation rates in excess of 120 percent.

Jay Greene of the Manhattan Institute has used two methods to adjust the basic graduation rate calculations based on changes in student population. The first considers changes in the high school population from the year the graduating class started high school. The second considers changes to the overall population in grades 1-12. Both formulas also attempt to address concerns about the "9th grade bubble" by using a "smoothed average of 8th, 9th and 10th grade enrollments for the graduating cohort:

$$\text{Greene Rate I: } = \frac{G_4}{E^{9S}_1 + [E^{9S}_1 * (E^{9\text{-}12}_4 - E^{9\text{-}12}_1)/E^{9\text{-}12}_1]}$$

G_4 = the number of graduates in a particular class (year 4 of a high school cohort)
E^{9S}_1 = "smoothed average" of 8th, 9th & 10th grade enrollment for the graduating cohort
$E^{9\text{-}12}_1$ = total high school enrollment (grades 9-12) during the graduation cohort's 9th grade year
$E^{9\text{-}12}_4$ = total high school enrollment (grades 9-12) during the graduation cohort's 12th grade year

$$\text{Greene Rate II: } = \frac{G_4}{E^{9S}_1 + [E^{9S}_1 * (E^{1\text{-}12}_4 - E^{1\text{-}12}_1)/E^{1\text{-}12}_1]}$$

G_4 = the number of graduates in a particular class (year 4 of a high school cohort)
E^{9S}_1 = "smoothed average" of 8th, 9th & 10th grade enrollment for the graduating cohort
$E^{1\text{-}12}_1$ = total district enrollment (grades 1-12) during the graduation cohort's 9th grade year
$E^{1\text{-}12}_4$ = total district enrollment (grades 1-12) during the graduation cohort's 12th grade year

Greene's formulas have been well received, for the most part, in education and research circles. There are some potential flaws with these approaches and even Greene admits that the results are only estimates; but most people seem to agree that these estimates are more accurate than most other available data.

To date, the Greene formulas have been used primarily for state-level calculations and for only a couple of district-level state reports. As the formula is used more at the district and school levels, it seems that the estimations will be deemed less precise. For example, an application of the Greene formulas on Indiana school data yields graduation rates for several districts that are greater than 100 percent. Yet, the aggregated statewide results under Greene do appear more accurate than Indiana's officially reported data.

Given these ongoing questions, the author has crafted two additional formulas to use for further comparison. The first uses enrollment data for only grades 1-8 for the growth rate multiplier. Growth at these grade levels may or may not be a good proxy for true growth at the high school level. Yet, there also are challenges with the alternative – measuring change at the high school level, as is done with both Greene formulas – due to changes in enrollment that may actually be the result of changing dropout rates. As a result, using changes in high school enrollment could actually inflate the reported rates for schools with increasing dropouts while deflating the reported rates for schools with decreasing dropouts. By focusing on changes only in grades 1-8, the following formula removes the probability that changes in dropout rates will affect the formula.

$$\text{Redelman Rate I:} = \frac{G_4}{E^{9S}{}_1 + [E^{9S}{}_1 * (E^{1\text{-}8}{}_4 - E^{1\text{-}8}{}_1)/E^{1\text{-}8}{}_1]}$$

G_4 = the number of graduates in a particular class (year 4 of a high school cohort)
$E^{9S}{}_1$ = "smoothed average" of 8th, 9th & 10th grade enrollment for the graduating cohort
$E^{1\text{-}8}{}_1$ = total district enrollment (grades 1-8) during the graduation cohort's 9th grade year
$E^{1\text{-}8}{}_4$ = total district enrollment (grades 1-8) during the graduation cohort's 12th grade year

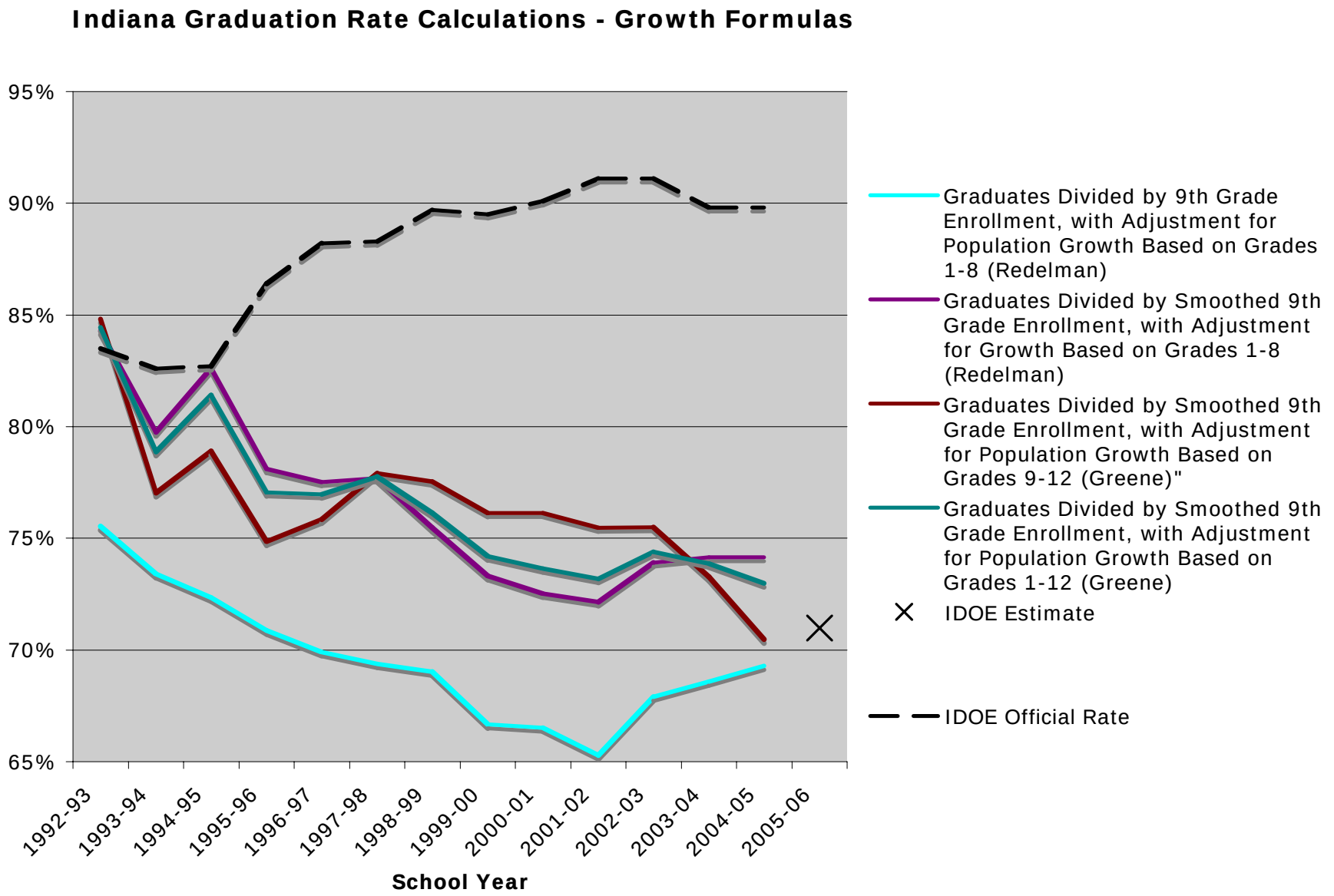
The second alternative also uses the grade 1-8 growth multiplier and differs additionally from the Greene formulas by replacing the "smoothed" 9th grade enrollments with actual 9th grade counts. Again, this formula provides an additional point of comparison and is offered specifically in response to additional work beyond this briefing paper that suggests problems, at district and school levels, with the "smoothed" calculations. For example, data for private school enrollments suggest that, in some districts and in some years, the influx of private school students (and possibly home school students) accounts almost completely for the increased numbers of public school 9th graders. Additionally, at several schools that serve 7th-12th graders in the same building, the "bubble" either does not exist or occurs at an earlier grade; thus, the impact of dropout changes is likely a greater factor in the averaging process.

$$\text{Redelman Rate II:} = \frac{G_4}{E^{9}{}_1 + [E^{9}{}_1 * (E^{1\text{-}8}{}_4 - E^{1\text{-}8}{}_1)/E^{1\text{-}8}{}_1]}$$

G_4 = the number of graduates in a particular class (year 4 of a high school cohort)
$E^{9}{}_1$ = 9th grade enrollment for the graduating cohort
$E^{1\text{-}8}{}_1$ = total district enrollment (grades 1-8) during the graduation cohort's 9th grade year
$E^{1\text{-}8}{}_4$ = total district enrollment (grades 1-8) during the graduation cohort's 12th grade year

Chart 2 plots the results for Indiana of all four growth-based calculation methods.

Chart 2


Indiana Graduation Rate Calculations - Growth Formulas
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2005-06
School Year
Graduates Divided by 9th Grade Enrollment, with Adjustment for Population Growth Based on Grades 1-8 (Redelman)
Graduates Divided by Smoothed 9th Grade Enrollment, with Adjustment for Growth Based on Grades 1-8 (Redelman)
Graduates Divided by Smoothed 9th Grade Enrollment, with Adjustment for Population Growth Based on Grades 9-12 (Greene)"
Graduates Divided by Smoothed 9th Grade Enrollment, with Adjustment for Population Growth Based on Grades 1-12 (Greene)
IDOE Estimate
IDOE Official Rate

Additional Calculation Methods

Three additional models have been advanced by notable national organizations that have sought to use data readily available from the U.S. Department of Education's Common Core of Data. The first of those, dubbed the Cumulative Promotion Index (CPI), was created by researchers for the Urban Institute. The CPI uses elements similar to Indiana's current "survival rate" calculation, but with an exclusive focus on enrollment and graduation data; thus, it avoids the data corruption encountered by similar models that rely on dropout data. Effectively, it compares enrollment levels at the beginning of each year to those at the end of each year – or more precisely, to either the start of the next year or, for 12th grade, the number of graduates:

$$\text{Grad Rate} = \frac{E^{10}_{2}}{E^{9}_{1}} \times \frac{E^{11}_{2}}{E^{10}_{1}} \times \frac{E^{12}_{2}}{E^{11}_{1}} \times \frac{G_1}{E^{12}_{1}}$$

G_1 = The number of graduates in a particular year
E^{9}_{1}, E^{10}_{1}, E^{11}_{1}, E^{12}_{1} = Enrollment in the 9th, 10th, 11th & 12th grades, respectively, for the same year as G_1
E^{10}_{2}, E^{11}_{2}, E^{12}_{2} = Enrollment in the 9th, 10th, 11th & 12th grades, respectively, for the year following G_1

Like Indiana's "survival rate" calculation, the CPI does not provide a graduation rate for any particular graduating class, but it does produce an estimate of such rates that has been deemed sufficiently reliable, considering the integrity of available data, to serve as the preferred calculation method for the Education Trust, a notable education think tank that has done significant work in Indiana and elsewhere.

The second method, dubbed the Promoting Power Index (PPI), has been advanced by researchers at Johns Hopkins University. This simple formula considers only the 9th and 12th grade enrollment numbers for a particular cohort of students:

$$\text{Grad Rate} = \frac{E^{12}_{4}}{E^{9}_{1}}$$

E^{12}_{4} = 12th Grade Enrollment in Year 4
E^{9}_{1} = 9th Grade Enrollment in Year 1

As with other simple calculation methods, the PPI does not adjust for the 9th grade issues described earlier in this report. The PPI also does not consider actual graduation counts, thus ignoring any students that may have dropped out during their senior years.

More recently, the National Governors Association has adopted the 9th grade "smoothed average" that is a centerpiece of the Greene calculations described earlier. However, the NGA has begun using the "smoothed average" calculation without the additional adjustments for population growth that are part of both the Greene and Redelman calculations:

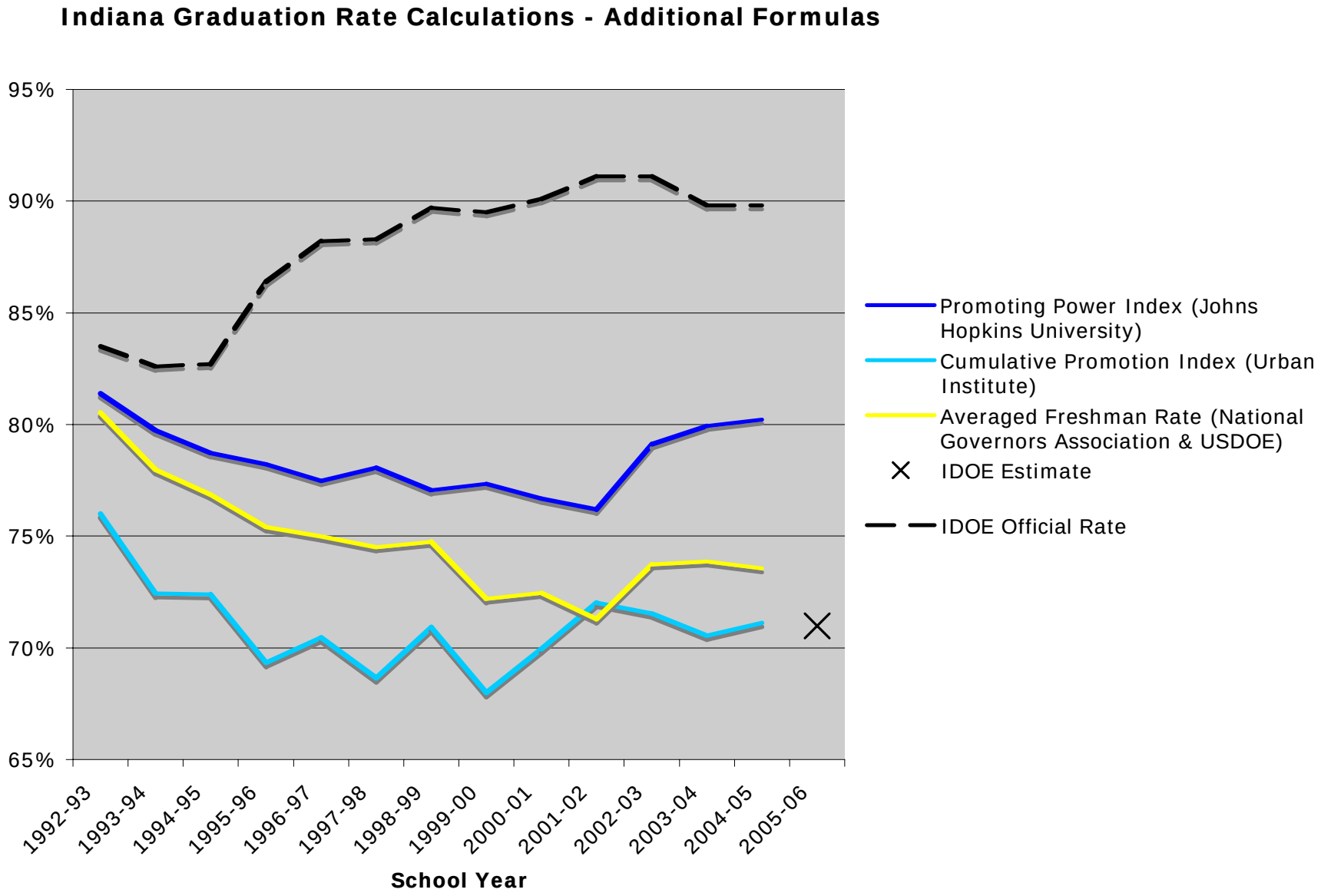
$$\text{Grad Rate} = \frac{G_4}{E^{9S}_{1}}$$

G_4 = Graduates in Year 4
E^{9S}_{1} = "smoothed average" of 8th, 9th & 10th grade enrollments for the graduating cohort

The 9th grade "smoothed average" is a tool that accepts the contention that 9th grade enrollment numbers are inflated, and it effectively ignores the inflow of private school students at the 9th grade. The science of this "smoothed average" approach may not be perfect; but until states can produce better data systems with individual student tracking, the National Governors Association has suggested this method as a way of producing reasonably sound estimates. This method also has been used, along with Greene's growth factors described earlier, in *Education Week*'s annual "Quality Counts" issue (2004) and by the Education Trust (2003).

Chart 3 plots the results for Indiana of these three additional calculation methods.

Chart 3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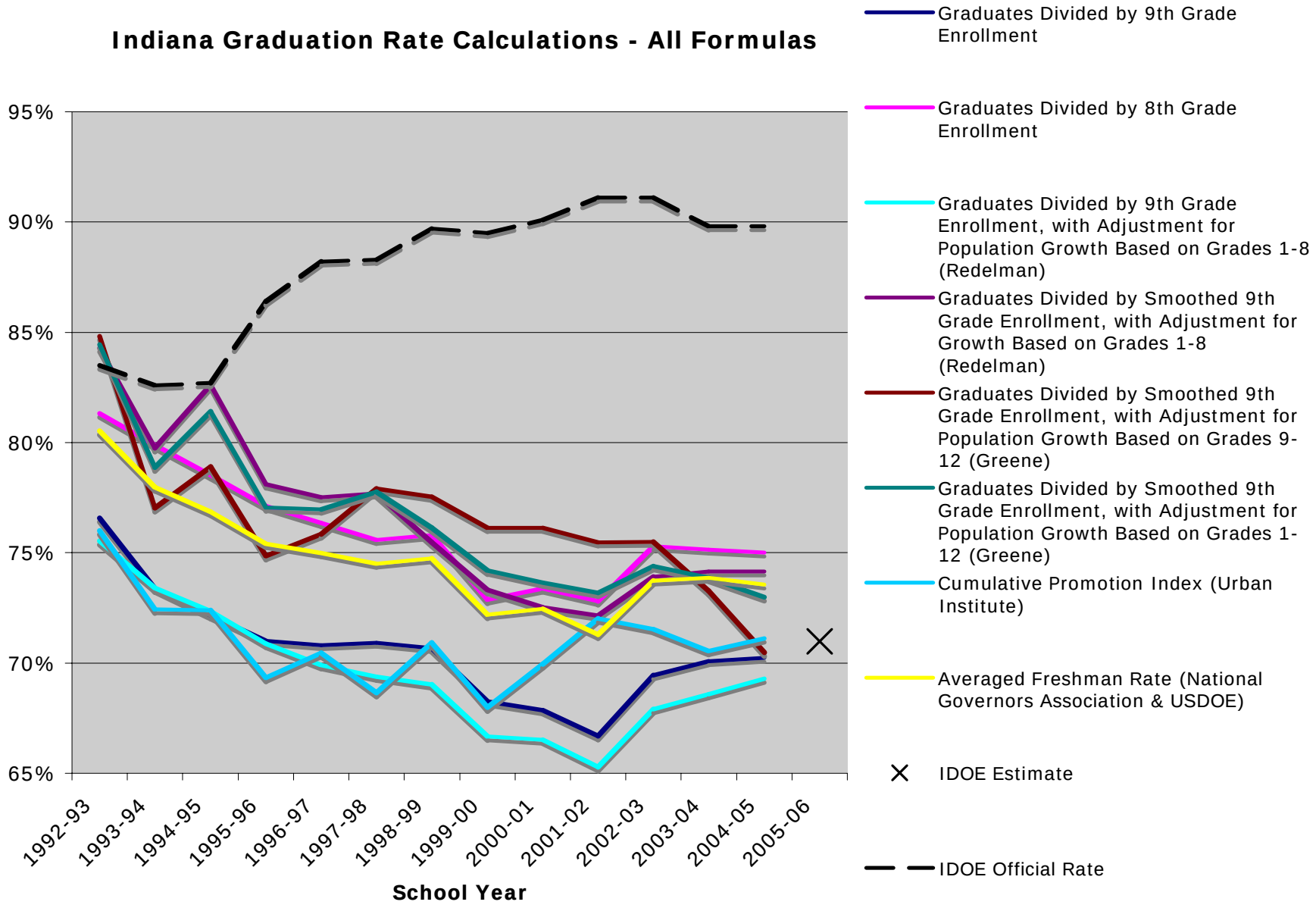
School Year
Promoting Power Index (Johns Hopkins University)
Cumulative Promotion Index (Urban Institute)
Averaged Freshman Rate (National Governors Association & USDOE)
IDOE Estimate
IDOE Official Rate

Summary of Graduation Rate Calculations

Chart 4 combines the results from eight of the nine calculation methods described previously[1]; while Chart 5 highlights the highs, lows, means and medians from each of these eight methods. Since there is no scientific or statistical reason for averaging these various calculations, each of the next two charts is provided primarily for illustrative purposes.

[1] The PPI has been excluded due to its obvious diversion from accurate data that are emerging from Indiana's new reporting and calculation method. This difference is likely the result of PPI's use of 12th grade enrollment, rather than actual graduates. That calculation method ignores any student that drops out during their senior year.

Chart 4


Indiana Graduation Rate Calculations - All Formulas
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75%
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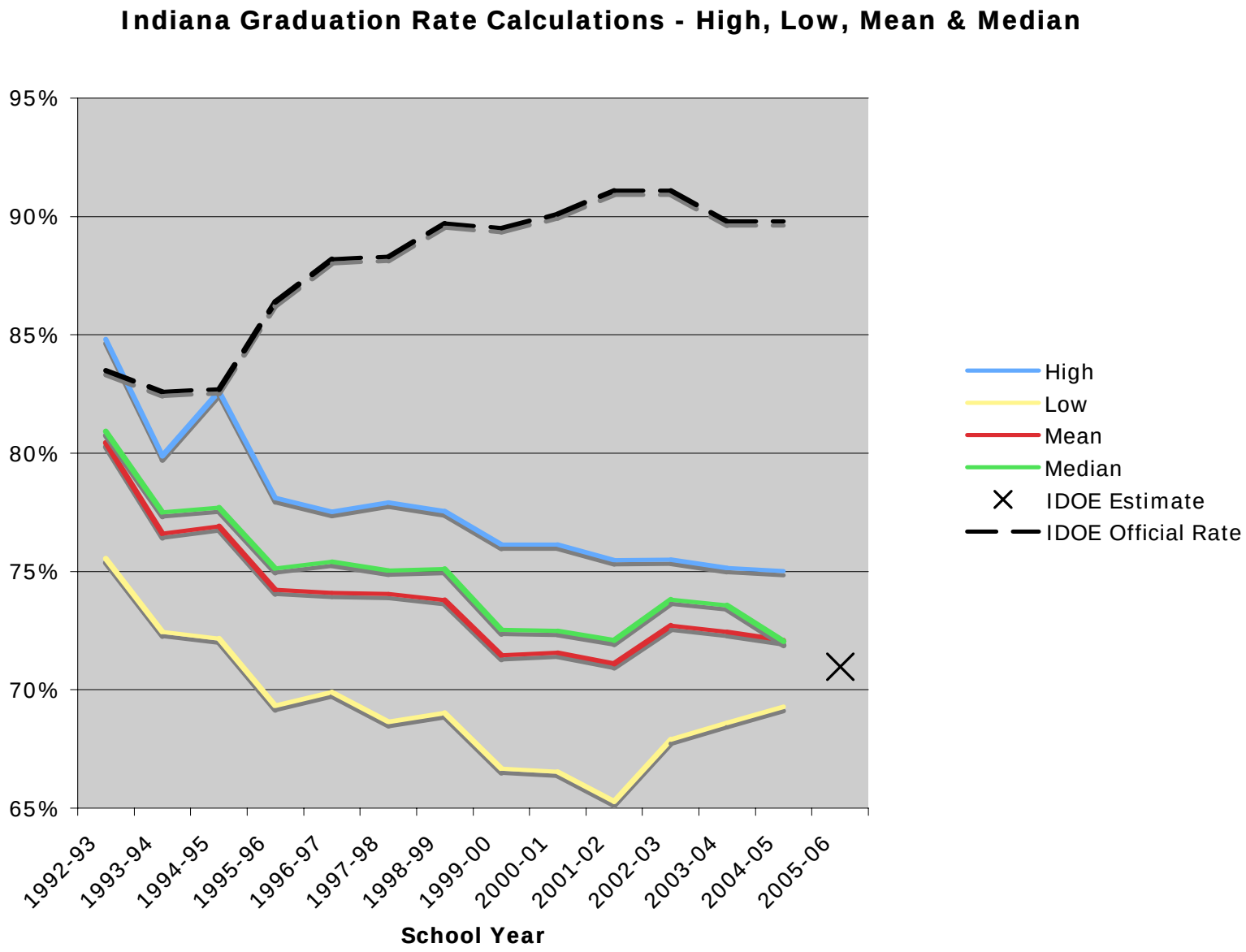
Cumulative Promotion Index (Urban Institute)
Averaged Freshman Rate (National Governors Association & USDOE)
IDOE Estimate
IDOE Official Rate

Chart 5


Indiana Graduation Rate Calculations - High, Low, Mean & Median
95%
90%
85%
80%
75%
70%
65%
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
1999-00
2000-01
2001-02
2002-03
2003-04
2004-05
2005-06
School Year
High
Low
Mean
Median
IDOE Estimate
IDOE Official Rate

INDIANA'S HIGH SCHOOL DROPOUT COUNTS

Official graduation rates, as published by the Indiana Department of Education, have hovered near 90 percent for nearly a decade. These rates would suggest that 10 percent of students – approximately 8,000 students from each graduating class – have dropped out of school, when calculated as a percentage of 9th graders enrolled four years earlier. Official dropout counts tell a similar story although these official counts are for a single calendar year, not a particular class of students, and include students in grades 7-12, not just 9-12. The following chart summarizes these counts for the years that data are available:

TABLE 2: Dropout Counts Based on Official IDOE Graduation Data

	Dropouts Actually Reported (grades 7-12)	Dropouts as Inverse of the Official IDOE Graduation Rate		Dropouts Actually Reported (grades 7-12)	Dropouts as Inverse of the Official IDOE Graduation Rate
1987-88		19,897	**1996-97**	9,485	7,688
1988-89		20,850	**1997-98**	9,340	7,804
1989-90		17,071	**1998-97**	8,426	6,763
1990-89		13,783	**1999-98**	8,361	6,687
1991-92		12,200	**2000-99**	7,499	6,170
1992-93	12,691	11,540	**2001-02**	6,714	5,376
1993-94	13,307	11,796	**2002-03**	6,787	5,493
1994-95	13,564	12,013	**2003-04**	8,045	6,358
1995-96	10,527	8,948	**2004-05**		6,292

Source: Indiana Department of Education

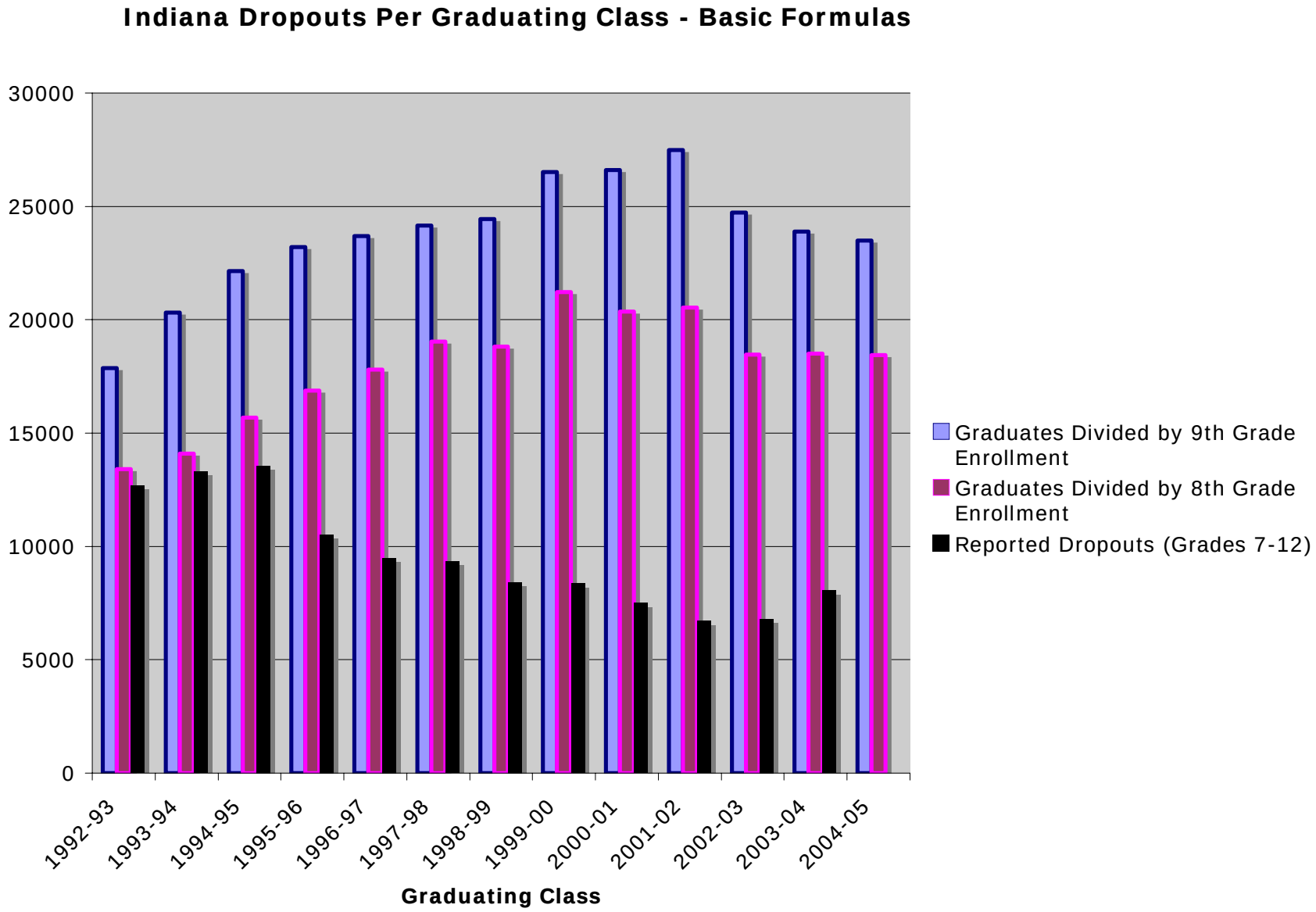
While these data paint a picture that is improving steadily – as have the Department of Education's official graduation rates – the range of graduation rate calculations presented in the previous section suggest a very different story. The following charts provide estimates of accurate dropout counts using the various graduation rate calculations described earlier. Each graph also presents for comparison the Department of Education's official dropout counts.

While official IDOE reports suggest that only 6,292 members of the 2004-05 graduating class did not earn a high school diploma, the median of the alternative calculations puts that number over three times higher – at 21,508. Over the last 12 years for which data are available, even the official IDOE rates suggest that nearly 100,000 students have left school without a high school diploma, while the median of the alternative calculations puts that number closer to 250,000.

Charts 6-8 present dropout estimates based on the formulas illustrated in Charts 1-3, respectively. Chart 9 summarizes these various rates in one graph.[2] And Chart 10 graphs the highs, lows, means and medians of these various calculations.

[2] For reasons noted earlier, the PPI calculation is excluded from the summary graphs.

Chart 6


Indiana Dropouts Per Graduating Class - Basic Formulas
30000
25000
20000
15000
10000
5000
0
1992-93
1993-94
1994-95
1995-96
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2001-02
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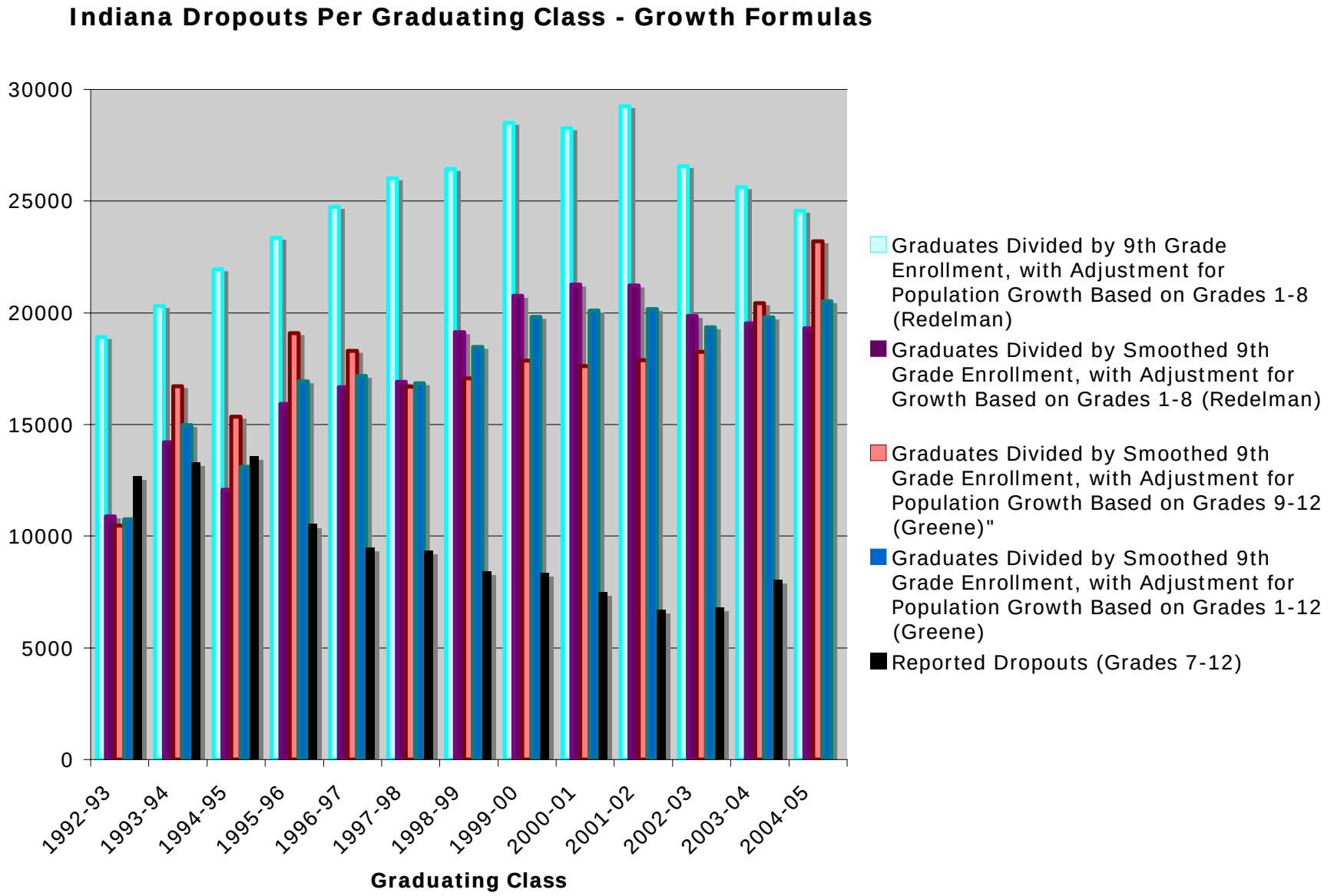
2004-05
Graduating Class
Graduates Divided by 9th Grade Enrollment
Graduates Divided by 8th Grade Enrollment
Reported Dropouts (Grades 7-12)

Chart 7


Indiana Dropouts Per Graduating Class - Growth Formulas
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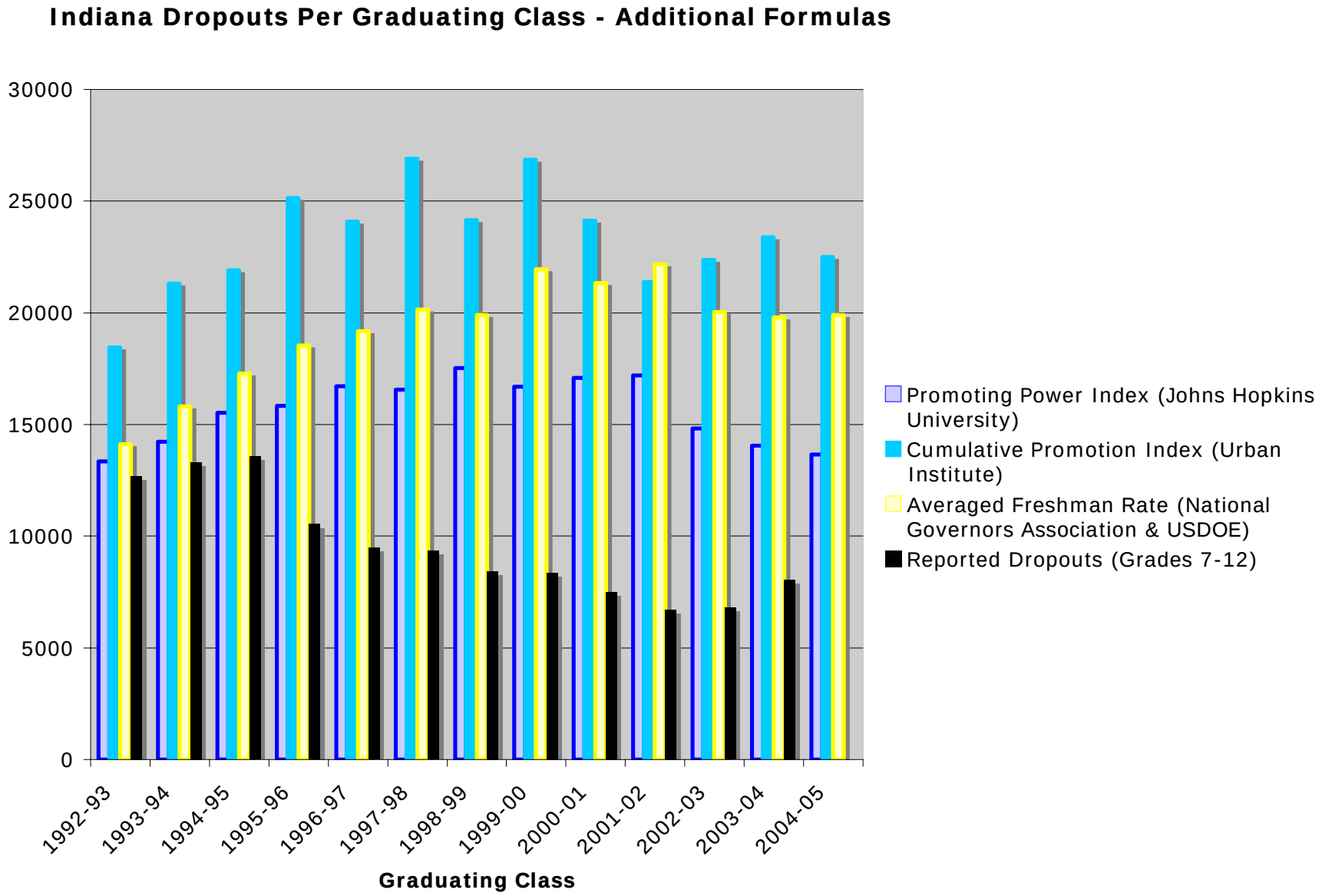
Graduates Divided by Smoothed 9th Grade Enrollment, with Adjustment for Population Growth Based on Grades 1-12 (Greene)
Reported Dropouts (Grades 7-12)

Chart 8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Graduating Class
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Reported Dropouts (Grades 7-12)

Chart 9

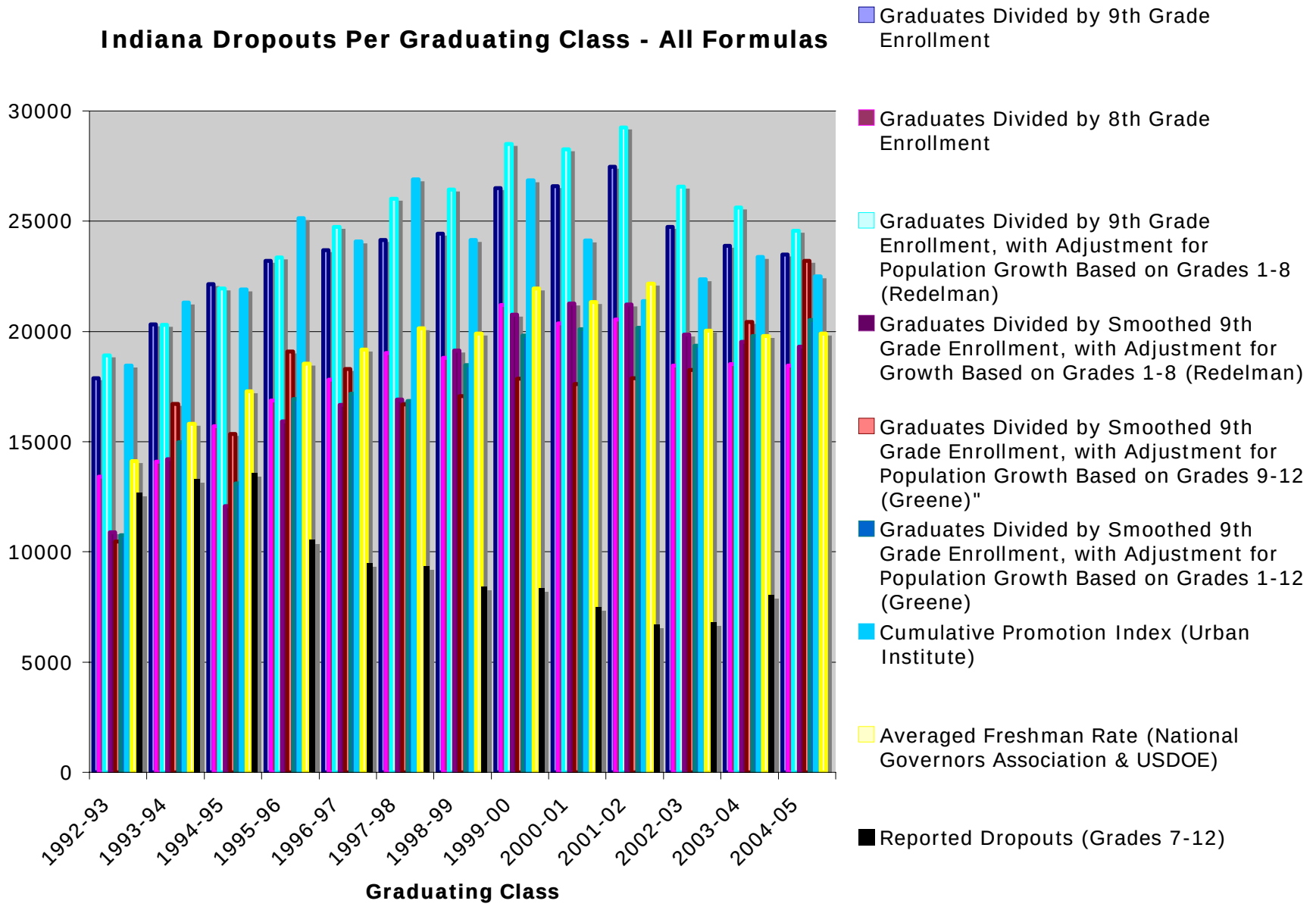
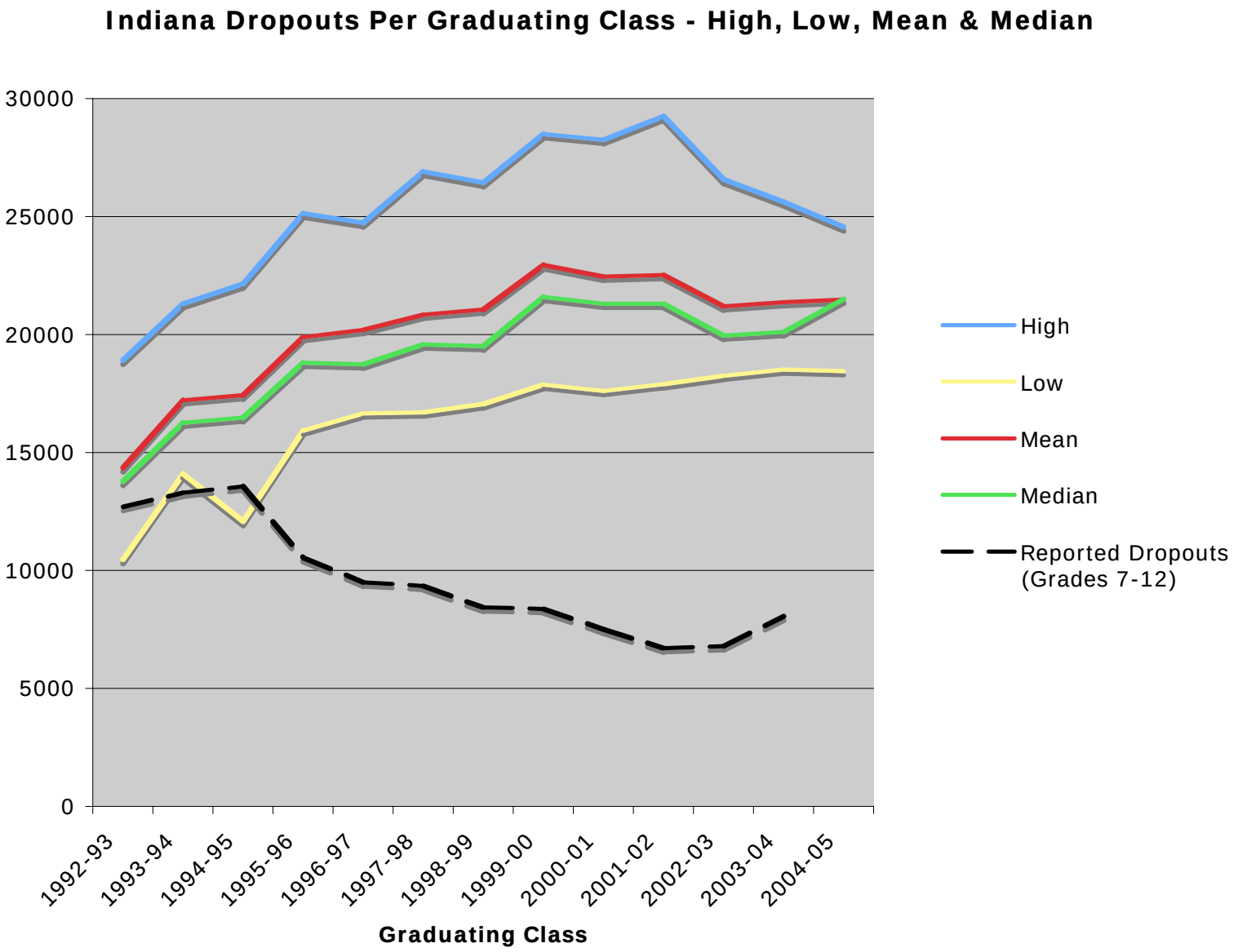

Indiana Dropouts Per Graduating Class - All Formulas
30000
25000
20000
15000
10000
5000
0
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
1999-00
2000-01
2001-02
2002-03
2003-04
2004-05
Graduating Class
Graduates Divided by 9th Grade Enrollment
Graduates Divided by 8th Grade Enrollment
Graduates Divided by 9th Grade Enrollment, with Adjustment for Population Growth Based on Grades 1-8 (Redelman)
Graduates Divided by Smoothed 9th Grade Enrollment, with Adjustment for Growth Based on Grades 1-8 (Redelman)
Graduates Divided by Smoothed 9th Grade Enrollment, with Adjustment for Population Growth Based on Grades 9-12 (Greene)"
Graduates Divided by Smoothed 9th Grade Enrollment, with Adjustment for Population Growth Based on Grades 1-12 (Greene)
Cumulative Promotion Index (Urban Institute)
Averaged Freshman Rate (National Governors Association & USDOE)
Reported Dropouts (Grades 7-12)

Chart 10


Indiana Dropouts Per Graduating Class - High, Low, Mean & Median
30000
25000
20000
15000
10000
5000
0
1992-93
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
1999-00
2000-01
2001-02
2002-03
2003-04
2004-05
Graduating Class
High
Low
Mean
Median
Reported Dropouts (Grades 7-12)

CONCLUSIONS

Due to various questions that have been outlined, the data in this report do not offer a definitive outline of Indiana's graduation rates, graduation trends and dropout counts. But these data do demonstrate some clear and important observations:

1) **Regardless of the calculation method considered, the trend of Indiana's graduation rate has clearly been downward for more than a decade. This conclusion runs directly counter to the official rates that have been reported over the same period and also runs directly counter to the rising demands of the workforce.**

2) **The latest estimates by the Indiana Department of Education begin to shed some light on the accuracy of various estimation methods that have been used for graduation rates:**

    a. **The only method that seems clearly inaccurate at this point is the Promoting Power Index, which ignores any students that drop out during their senior years.**
    b. **The most accurate of the various calculations may actually be the simplest ones – the commonly used graduates divided by ninth graders and the Cumulative Promotion Index, which was created by the Urban Institute. (Interestingly, the CPI is very similar to the old formula used in Indiana except that the CPI relies only on enrollment and graduation data while the Indiana formula relied on dropout data, which has been proven to be grossly under-reported.)**
    c. **While additional data are needed to verify this observation, it would appear that formulas depending on 8th grade data (rather than 9th) or adjusted counts for the 9th grade may actually inflate the graduation rate beyond reality.**

3) **The best estimates, as well as averaged estimates, indicate that over 20,000 Hoosier students drop out annually. This is a very large number that has serious public policy and economic consequences. And while this trend appears to have leveled off in recent years, it does not show any indication of steady improvement.**

4) **The estimates of past years and trends will improve as more data are collected under Indiana's new graduation reporting and calculations methods:**

    a. **Additional data will help researchers to select a calculation method that is more accurate over time than is true of the data that have been officially reported by the IDOE; and**
    b. **Additional data will allow researchers to select a calculation method that best estimates the graduation rates of individual districts and schools, which are likely more impacted by migration than is true for state-level aggregated data.**

Data Sources

All of the data used for this report were collected from online databases of the Indiana Department of Education (IDOE). Specifically, the following data were used:

For enrollment data, the sets labeled: "PE8401 =83-84*GRADE 1*PUBLIC ENROLL" through "PE9512 ~94-95*grade 12*public enroll"; and aggregated state data for years 1995-96 through 2004-05 from: http://mustang.doe.state.in.us/TRENDS/project.cfm?corp=5385.

For graduation data, each of the sets labeled: "AG88GHON =87-88 GRADUATES*HONORS", "AG88GOTH =87-88 GRADUATES*OTHER" and "AG88GREG =87-88 GRADUATES*REGULAR" for 1987-88 through 1995-96, respectively; and "AG97C40O =96-97 Graduates*Core 40 Only", "AG97GHON =96-97 Graduates*honors" and "AG97GREG =96-97 Graduates*regular" for 1996-97 through 2003-2004, respectively.

Estimates of student dropout numbers were calculated by subtracting the total graduates for each year from the divisor of graduates over the respective graduation rate.

Resources

Indiana Department of Education. http://ideanet.doe.state.in.us/htmls/education.html

National Governors Association. http://www.nga.org/

Manhattan Institute for Policy Research. The Education Research Office. http://www.miedresearchoffice.org/

Daria Hall. June 2005. *Getting Honest About Graduation Rates: How State Play the Numbers and Students Lose.* The Education Trust.

Christopher Swanson. February 25, 2004. *Who Graduates? Who Doesn't? A Statistical Profile of Public High School Graduation, Class of 2001.* Education Policy Center, the Urban Instituate.

Jay Greene and Greg Forster. September 2003. *Public High School Graduation and College Readiness Rates in the United States*. The Manhattan Institute for Policy Research.

Marilyn Seastrom, Lee Hoffman, Chris Chapman and Robert Stilwell. October 2005. *The Averaged Freshman Graduate Rate for Public High Schools From the Common Core of Data: School Years 2001-2 and 2002-03.* National Center for Education Statistics, U.S. Department of Education.

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