Accuracy of API Index and School Base Report Elements

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The School Report for the Academic Performance Index (API) contains the following school-level quantities: API score, Statewide Rank (state decile of school API score), and Similar Schools Rank (decile of school score among the 100 similar schools). Descriptive statistical summaries for these quantities can be found in the "Interpretive Notes" series of reports on this site. This accuracy report presents some statistical properties of the API index and the accuracy resulting from the use of the API index to determine the Statewide (decile) Rank and the Similar Schools Rank. This main report is based on the 1999 data, with separate update reports for the year 2000 and 2001 data. A main motivation for studying the statistical properties of these quantities in the School Report is to address the question: How seriously can we regard these numerical values without (over)interpreting these numbers beyond the accuracy they can support?

The structure of this report is in three (obvious) parts:

Part A "Standard Errors of School API" addresses accuracy for School API Score with descriptive statistics and plots for s.e.(API).

Part B "Hit Rate for Statewide Decile Ranks" addresses accuracy for State Decile (State Rank) with descriptive statistics and plots for the probability of correct decile classification.

Part C "Properties of Similar Schools Rank" addresses accuracy for Similar Schools Decile (Rank) with classification probabilities for a set of Elementary and High School examples.

The "Plan and Preview" document on this site provides a sort of Executive Summary for these accuracy reports. An important preamble to the presentation of these statistical properties is the "Interpretive Notes" series of data analysis reports (available from this page). That content was originally envisioned as the opening chapters for the Accuracy Reports, following the simple logic that before explaining the statistical properties (e.g., accuracy) of the API, it's useful to first explain a bit about the basic index and its reporting. The initial Interpretive Notes covered the 1999 API data, with the additional update reports covering the year 2000 and the year 2001(growth) data. These reports provide descriptions and interpretation for the API scores and the improvement in the API (including subgroups). Additional topics in those reports include demonstrations that the link between demographics and school performance is much weaker than is asserted by various interest groups and that school size has almost no relation with school performance.

The present document does not discuss properties of the API award programs; materials on the properties of the award programs are found on the CDE website in the "Commentaries on the Orange County Register Series", the "Plan and Preview for API Accuracy Reports" and in a separate critique (see

esp. sec. 4) "Irrelevance of Reliability Coefficients to Accountability Systems: Statistical Disconnect in Kane-Staiger 'Volatility in School Test Scores'" (available at http://www-stat.stanford.edu/~rag/api/kscresst.pdf).

As with any public policy topic, there are myriad opportunities for misuse and misinterpretation of statistical information. Such concerns came to the fore in August 2002, when the Orange County Register published a week-long series of attack pieces on the California accountability system, with a focus on concerns about the accuracy of the API index. Regrettably, the content of the Orange County Register reporting in articles by Sarah Tully, Keith Sharon, and Ronald Campbell (with identified experts Richard Hill and Thomas Kane) was based on deficient statistical work. In the September 2002 "Commentaries on the Orange County Register Series" (California Department of Education website: http://www.cde.ca.gov/psaa/apiresearch.htm), I showed that the headline OCRegister claim of a 35% false positive rate for the API awards was too large by a factor of 30 (see "What's the Magnitude of False Positives in GPA Award Programs?") and that their use of a "margin of error" construct for the accuracy of the API was nonsense (see "Application of OCR 'margin of error' to API Award Programs").

A critical misunderstanding in the OCRegister content was their failure to heed the message of the July 2002 "Plan and Preview" document which emphasized

> "the disconnect between describing the properties of the API index and the analysis of the properties of decisions made using the API index. Most important, intuitions formed by examining the standard error of the API score are not easily transformed into conclusions about the award programs."

To rephrase: it's not the size of your standard error, it's how you use it.

Part A. Standard Errors of School API

The first topic is the standard error (a measure of statistical uncertainty) of the school-level API index. (The standard error is the most familiar, but not the only, metric for describing the accuracy of the score.) Computation of the standard error for each school is through bootstrap resampling methods (each bootstrap samples of size n constructed by sampling with replacement individual students n times from the school dataset). The value for the standard error of the school score is simply the standard deviation for the (4000) API bootstrap replications.

Descriptive statistics for the standard error of the API--s.e.(API)--are shown in Table 1, first for each school type and below that the median standard error for each state decile. Further display of s.e.(API) is provided by the plots for Elementary, Middle and High Schools in Figure 1. Regardless of school type, schools have a wide range of values for s.e.(API).

INSERT TABLE 1
INSERT FIGURE 1

A major feature of s.e.(API) is the dependence on the number of students (denote by n) contributing to the school's API index. In California, Middle Schools have about twice the number of API students as Elementary Schools, and High Schools have about three times the number as Elementary Schools. Table 1 shows that the median standard errors for each school type follow quite closely the ratio indicated by relative school sizes (proportional to square root of relative sizes). Furthermore, the plots in Figure 1 of s.e.(API) versus 1/Sqrt(n) for Elementary, Middle and High Schools show the strong dependence of the standard error on the number of students. (To calibrate those plots note that axis points .1, .05, .025 correspond to n = 100, 400, 1600.) As the school API score can be expressed as a mean of individual scores, the 1/Sqrt(n) dependence of the standard error would be anticipated by any introductory statistics student.

Although the dependence of s.e.(API), on the number of students is strong, the plots in Figure 1 also show substantial differences for schools of the same size, mainly a result of the additional dependence of s.e.(API) on the school's API score. The plots of s.e.(API) versus API show a pattern of larger s.e.(API) for API scores in the middle of the distribution, a pattern readers with an introductory statistics course will recognize as characteristic of a proportion score. (And readers of the Interpretive Notes series will recall the demonstrated correspondences between the API and proportion of students above the 50th and 25th national percentile ranks.) The display of the median s.e.(API) by state decile in Table 1 similarly shows larger values for schools in the middle state deciles for each school type.

An additional display of s.e.(API) for individual schools is provided in Tables 5 and 7 for the grid of examples described in Part C. That is, s.e.(API) values are listed for each of the school examples in the 3 X 4 X 3 grid: API score (3 levels) by School Size (4 levels) by Similar Schools Rank (3 levels).

Table 1: Standard Error of School API (bootstrap resampling)

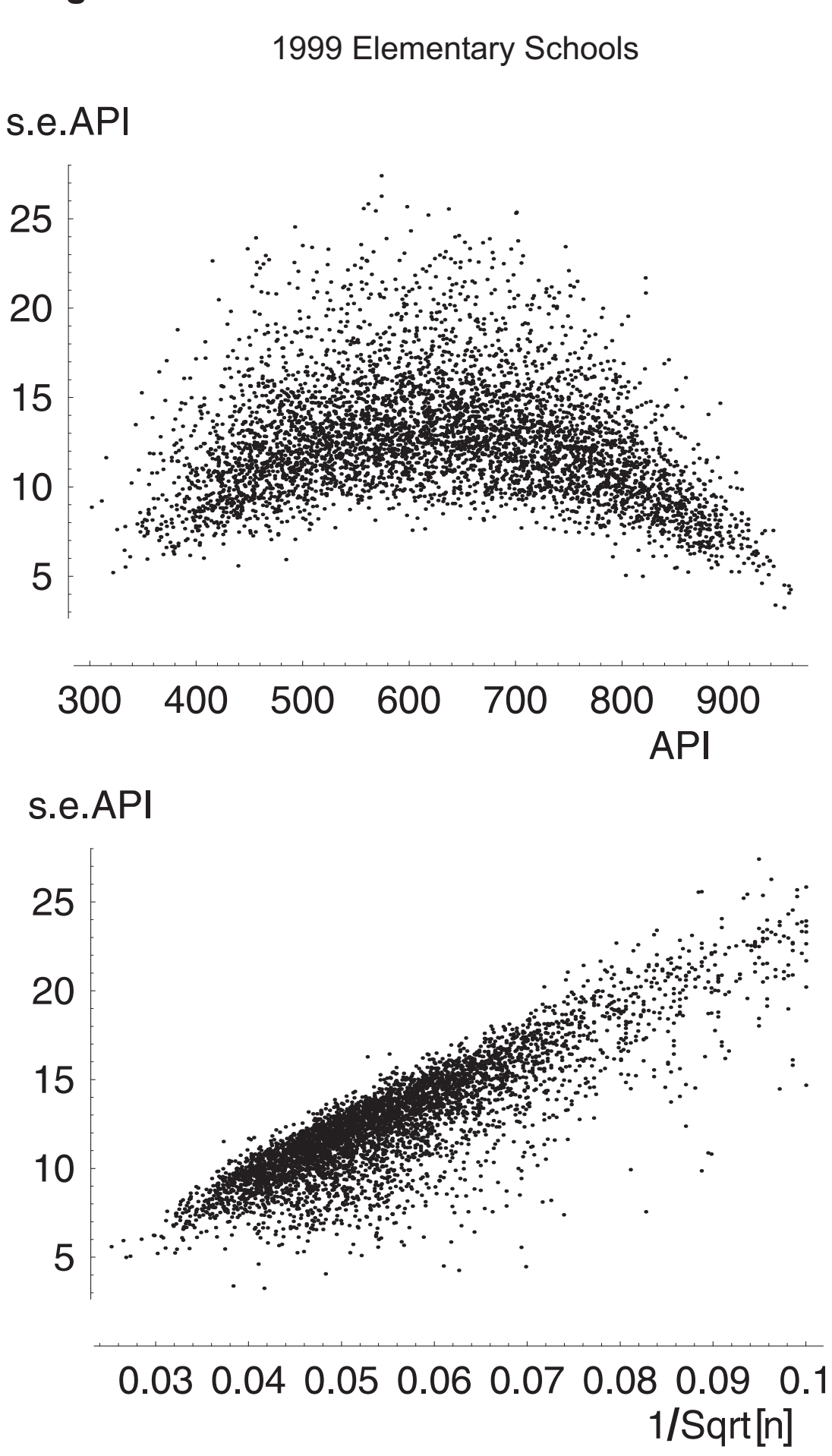
Descriptive Statistics: s.e.(API)

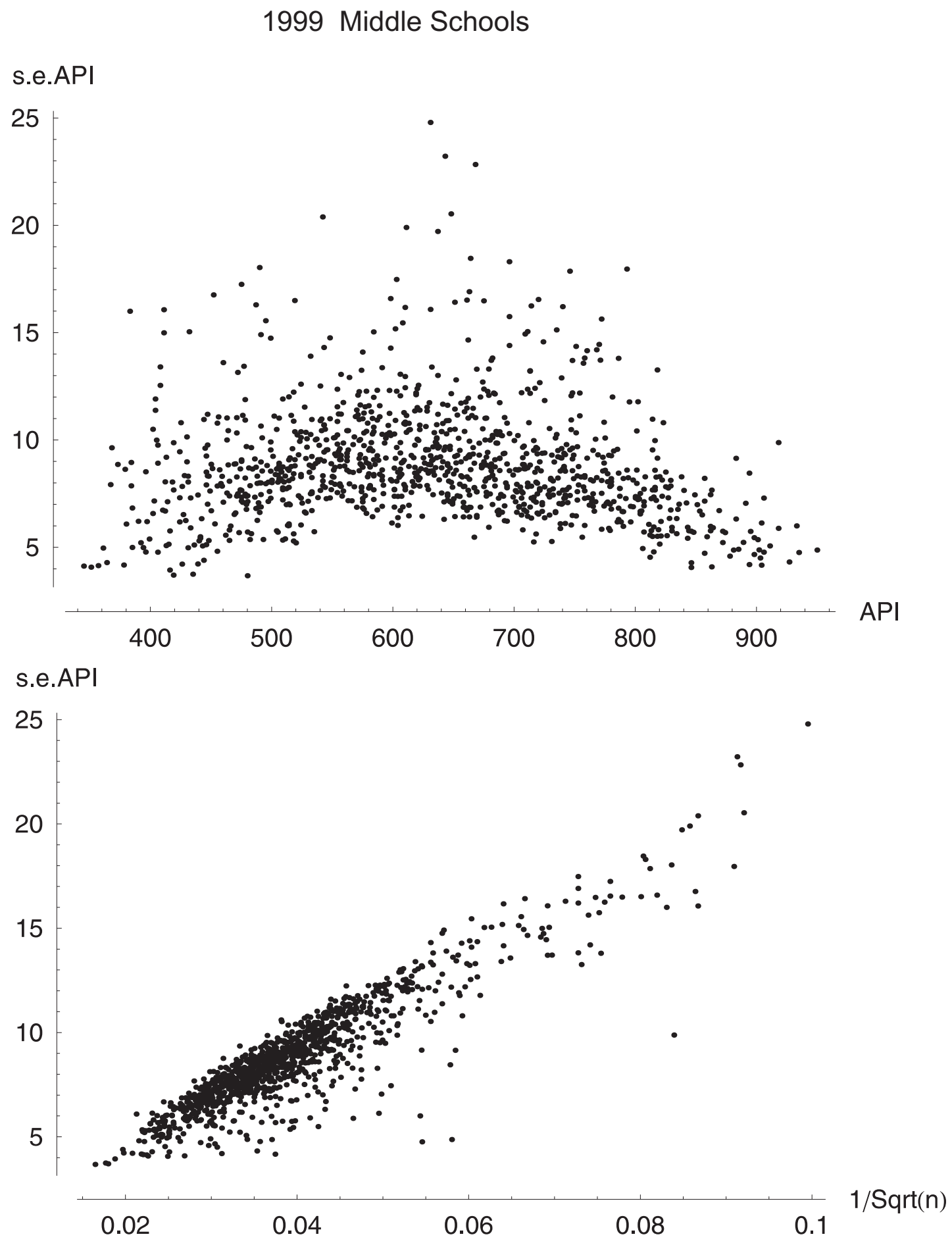
	N	Median	Q1	Q3	Minimum	Maximum
Elem	4849	**12.217**	10.329	14.338	3.244	27.411
Mid	1118	**8.491**	7.1906	10.005	3.687	24.975
High	837	**6.931**	5.831	8.863	2.014	23.149

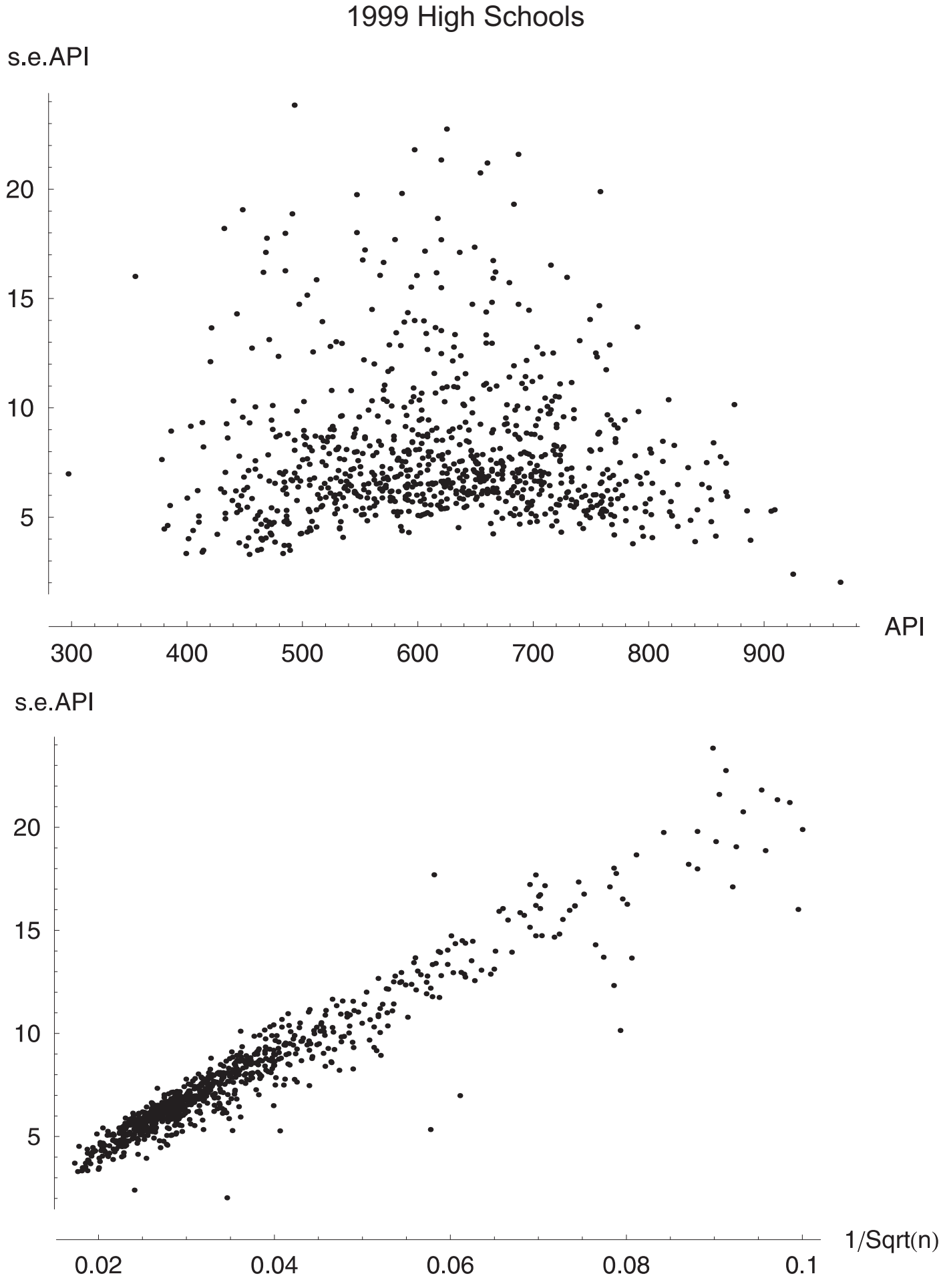
Median s.e.(API) by CARank (state decile)

	Elem		**Middle**		**High**	
CARank	N	Median	N	Median	N	Median
1	478	10.242	110	7.627	85	5.845
2	490	11.994	111	8.103	84	6.749
3	477	12.744	110	9.032	84	7.048
4	488	13.241	115	9.219	82	6.968
5	480	13.554	111	9.295	78	7.880
6	487	13.674	110	9.145	89	7.357
7	485	13.152	111	8.690	83	7.208
8	491	12.401	115	8.489	84	7.192
9	480	11.350	110	8.223	82	6.692
10	493	8.760	115	6.485	86	6.043

Figure 1 Plots for API Standard Errors




1999 Middle Schools
s.e.API
25
20
15
10
5
400
500
600
700
800
900
API
s.e.API
25
20
15
10
5
0.02
0.04
0.06
0.08
0.1
1/Sqrt(n)


1999 High Schools
s.e.API
20
15
10
5
API
300
400
500
600
700
800
900
s.e.API
20
15
10
5
1/Sqrt(n)
0.02
0.04
0.06
0.08
0.1

Statistical asides:
1. Because of the imputation procedure for missing individual test scores implicit in the calculation of the API (for school or subgroups), the rudimentary standard error estimate, standard deviation of individual scores divided by square root of n, will understate (because of nonindependence) the uncertainty of the API. The bootstrap resampling methods (or alternatively a sampling theory correction) will produce standard errors that are larger than the rudimentary estimate whenever some student scores are missing (which for a few schools is 15% of scores).
2. In forming the bootstrap estimates for standard error, the bootstrap samples could be constructed more carefully by stratifying on the subgroup classification (SD crossed with the 7 ethnic/racial categories) to guarantee that each bootstrap sample had the same subgroup memberships as the school dataset. Doing so does not reduce the bootstrap estimate of standard error noticeably.
3. An even more minor effect is the rounding to an integer in the reported API score. Whether the bootstrap standard error is computed using the replicates as the actual API value or a rounded value does not effect the standard error estimate.

To repeat a theme in the introductory discussion, it is easy to see that the school-level API scores do contain enough uncertainty that properties of award programs would be seen as unattractive if the award programs were based solely on the school API. But that's not how the California award programs are constructed (for additional material see Plan and Preview document and the Orange County Register Commentaries on this CDE site). Remember in regard to the properties of the award programs "it's not the size of the standard error, it's how you use it."

Subtopic Part A. Derived Values Based on seAPI: Reliability Coefficients for California API Scores

Calculation of API (school score) Reliability Coefficient

Readers familiar with educational testing are conditioned to speak of accuracy or "quality of measurement" in terms of a reliability coefficient. Below it is shown that even for a small elementary school (having s.e.(API) of nearly 20), the reliability of the API score exceeds .98. For readers not interested in the technical details of calculations for different sized schools, here's the simplest version. Take the set of 4849 Elementary Schools. The variance of the school API scores is 18728, and the mean of the API error variances (se(API)^2) is 169. Then a rough reliability coefficient is (18728 - 169)/18728 = .991 (Results below confirm that .991 is a good descriptor of the reliability of the median-sized Elementary School.)

The approach to the reliability calculations is a rough educational testing analogy where n (number of students) serves the role of test length and, as in IRT situations, the error variance in the score also depends on the score level. What is shown in Figure 2 are fits to the plots of se(API) from Figure 1 using a simple quadratic for the fit of standard error on API score and a straight-line for standard error on 1/Sqrt[n]. (More sophisticated fits using smoothers won't change the gist of the results).

INSERT FIGURE 2

These fits then allow calculation of reliability coefficients for a population of schools of a specified size. The reliability coefficient can be expressed in a number of equivalent forms:

reliability =
(observed variance - average error variance)/observed variance

The average error variance for a specified n was computed by integrating (averaging) the error variance functions displayed in Figure 2 over a "true score" distribution taken as Gaussian with observed score mean and variance computed as observed score variance minus overall average error variance. The observed variance is the sample variance for all included schools. (One could instead substitute the observed variance for the band of schools of similar size such as using the 552 Elementary schools of size 100 to 200 for the n=150 reliability calculation or the 692 Elementary schools of size 450 to 500 for the n=500 calculation; the largest effect on the reliability calculations is the n=150 case where the reliability would change from .982 to .979.)

Reliability coefficients for the API school score are presented in Table 2 for Elementary Schools and High Schools, each for three values of school size (API n). In each case the middle row is the median size. Elementary Schools have quartiles of school size for API of 262 and 459, so the n-values of 150, 350 and 500 are roughly mid-lower quartile, median, mid-upper quartile. The High School n-values in Table 2 of 500, 1000, 1500 are

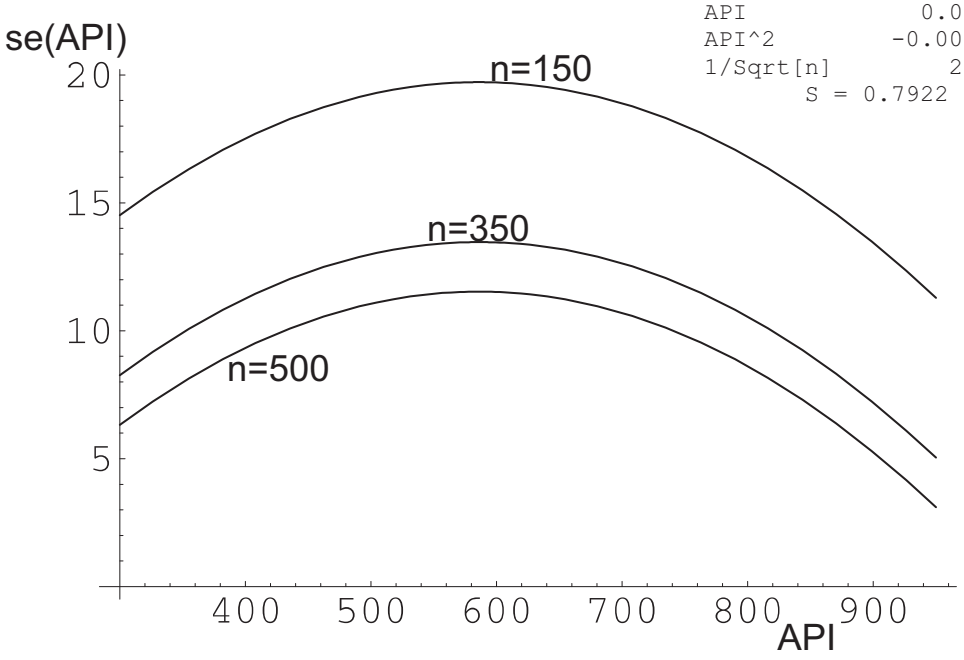
Figure 2 Error Variances for API Reliability Calculations

Elementary Schools fit,
4849 schools

The regression equation is
SEAPI = - 20.2 + 0.0746 API -0.000064 API^2 + 222 1/Sqrt[n]

Predictor	Coef	SE Coef	T
Constant	-20.2307	0.2296	-88.13
API	0.0745550	0.0007475	99.74
API^2	-0.00006361	0.00000058	-109.04
1/Sqrt[n]	221.712	0.921	240.82

S = 0.7922 R-Sq = 94.3%

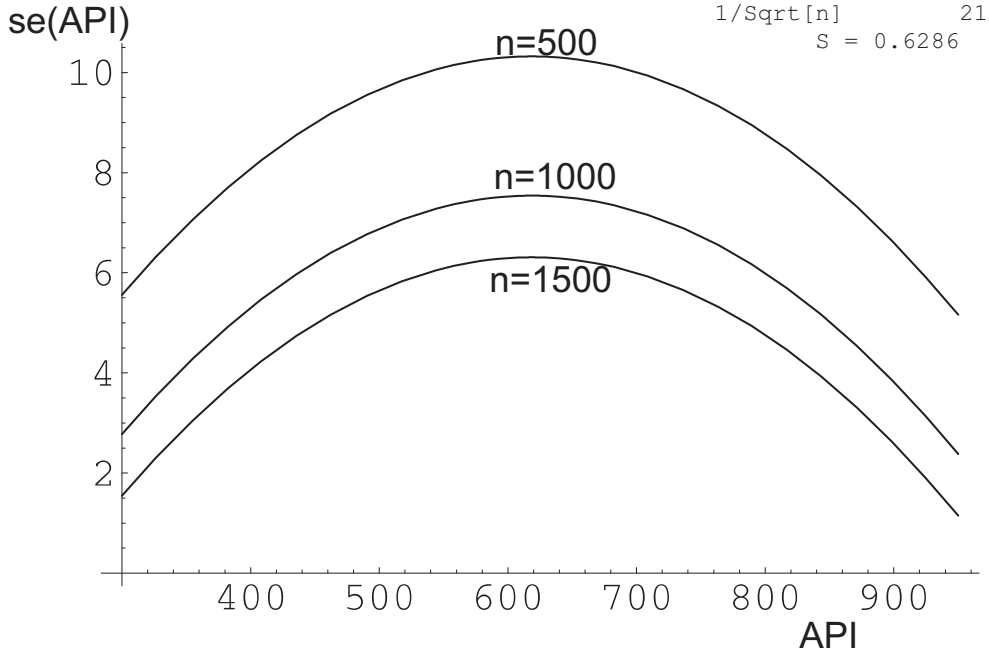


High School fit,
837 schools

The regression equation is
SEAPI = - 17.1 + 0.0581 API -0.000047 API^2 + 212 1/Sqrt[n]

Predictor	Coef	SE Coef	T
Constant	-17.1301	0.5728	-29.91
API	0.058072	0.001840	31.55
API^2	-0.00004695	0.00000146	-32.08
1/Sqrt[n]	212.317	1.456	145.84

S = 0.6286 R-Sq = 96.4%



approximately the lower quartile, median, and upper quartile of school size (number of API students).

Table 2 API Reliability Coefficients

Elementary Schools		High Schools	
n	reliability	n	reliability
150	0.982	500	0.991
350	0.992	1000	0.996
500	0.994	1500	0.997

Why is reliability of school scores so high? Relative standing assessments give great weight not to the accuracy of the scores, but to the ability to distinguish between low-scoring and high-scoring schools, a distinction that even rather inaccurate school scores cannot obscure.

Relation to Kane-Staiger "volatility"
In "Volatility in School Test Scores: Implications for Test-Based Accountability Systems" Kane and Staiger (hereafter KS) attempt to call into question the accuracy of API scores (and school assessment scores in general). Strangely, KS employ disguised forms of reliability coefficients to demonstrate "volatility"; see especially sections 1C and 1D in "Irrelevance of Reliability Coefficients to Accountability Systems: Statistical Disconnect in Kane-Staiger 'Volatility in School Test Scores'" David Rogosa October 2002. The reliability values above .99 in Table 2 translate for KS as less than one percent of variation in school API scores due to (sampling or measurement) error. Given these results the reader should wonder how Thomas Kane can characterize the API scores in the national press as having "a lot of volatility" (LA Times Oct. 16, 2001). To the contrary, by Kane's own criteria it would seem that California API scores should receive praise from Kane for a lack of volatility.

Part B. Hit Rate for Statewide Decile Ranks.

The second item in the California API report is a state decile (aka statewide rank) for the school API score,computed separately for each school type and using the range 1 (lowest decile) to 10 (top decile). The accuracy of the use of the school API score to determine the reported statewide rank is quantified here by the hit-rate:

decile accuracy hit-rate = 1 - Prob{sampling variability in API score moves the school out of its assigned decile}.

The decile accuracy hit-rate quantifies an answer to the question: What is the effect of the statistical variability (wobble) in the school API score on the statewide rank? This hit-rate provides one useful summary for the accuracy of the decile rank for each school. The median hit-rate for Elementary schools is .82 and for High Schools .89. Quartiles and median values for the hit-rates are broken down by state decile in Table 3.

INSERT TABLE 3

The hit-rates are estimated from a bootstrap resampling (e.g. 4000 replications for the school API), by simply tabulating the proportion of the API bootstrap replications that fall into the reported decile. (As a reasonable approximation decile boundaries assumed to be fixed, since these are based on the statewide distribution.) Other accuracy calculations for the decile rank could be presented (one alternative might be Bayesian-style Prob{'true' decile = k|reported decile = j}), but the hit-rate from resampling seemed to be the most straightforward quantity.

Of course, a school with an API score near a decile boundary will have a much larger probability of statistical variability moving the API score into the adjoining decile. That motivates plotting hit-rate versus position in the decile shown in Figure 3 and Figure 4. Figure 3 shows the hit rate for 1999 schools in statewide deciles 2 through 9; Figure 4 shows separate plots for each state decile. Schools in the middle of a decile have very high hit-rates, except for the smallest schools. The hit rate is dependent on the statistical uncertainty in the school API (one measure being the standard error of API) and the width of the decile. Therefore smaller schools near the middle of a decile will have smaller hit rates than larger schools. To give an indication of the effect of school size on the hit rate, in elementary schools deciles 5 and 6 (widths 42, 41), for schools in the middle of the decile, schools of size about 120 have hit rates about .64 whereas schools about double the size (around 240) have hit rates above .8. Because deciles for high schools are narrower than elementary schools small high schools will have even lower hit rates than the small elementary schools. The hit rate results do indicate that schools smaller than the 1999 minimum size of 100 would have decile ranks with limited accuracy. On the other hand, as seen in Figure 4 high school decile 2, schools of very large size will have hit rates near 1, even if their API scores are near the decile boundary (here about .1 along the decile).

INSERT FIGURE 3 AND FIGURE 4

Table 3 Decile Accuracy Hit Rates by School type and Decile

decile accuracy hit-rate =
1 - Prob{sampling variability in API score moves the school score out of its assigned decile}.

Elementary Schools

Decile	Median Hit-rate	Lower Quartile	Upper quartile
1	0.998	0.884	1.
2	0.787	0.659	0.902
3	0.786	0.652	0.897
4	0.762	0.645	0.866
5	0.751	0.642	0.832
6	0.724	0.623	0.829
7	0.777	0.644	0.87
8	0.798	0.67	0.9
9	0.888	0.739	0.962
10	1.	0.962	1.

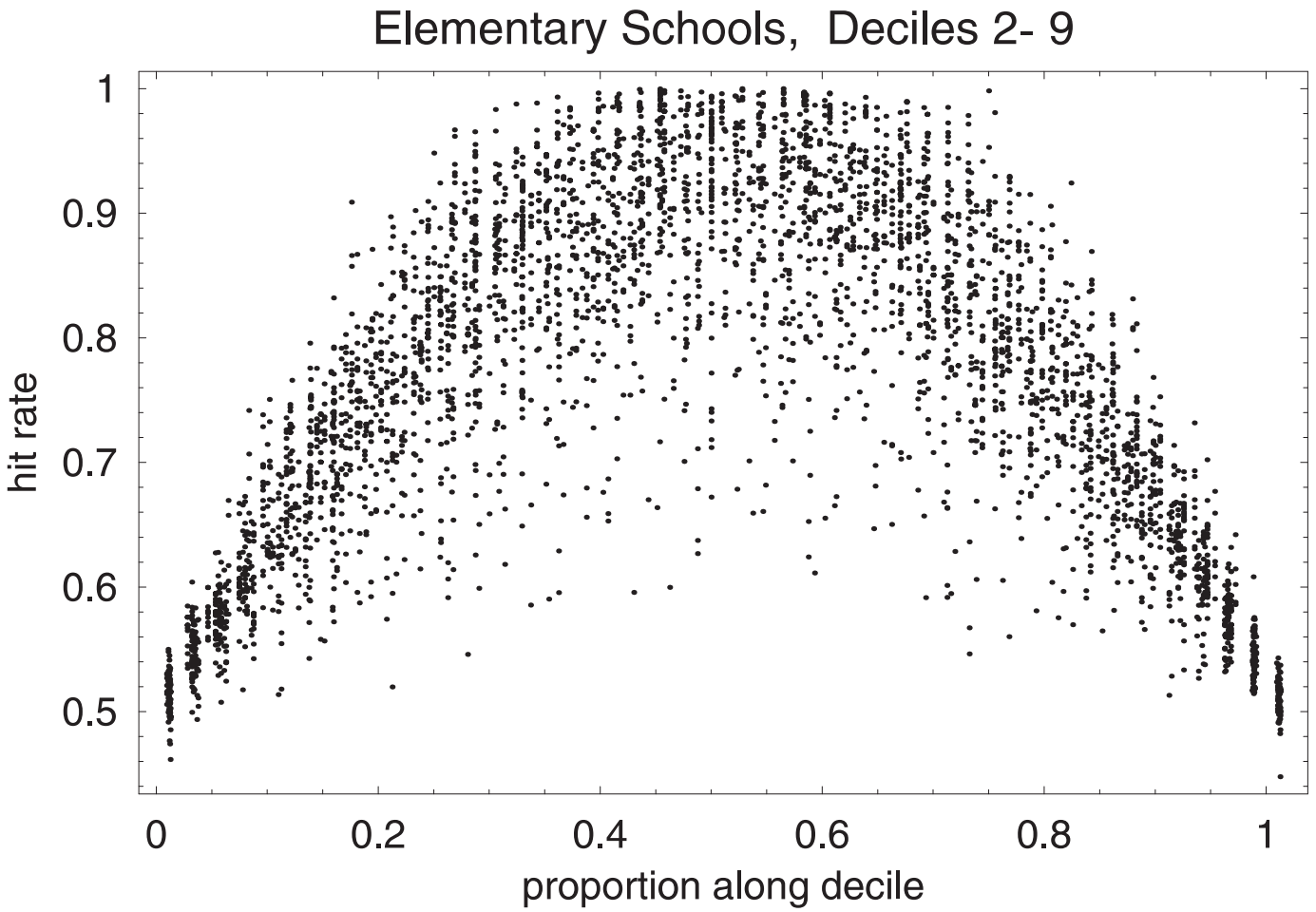
Middle Schools

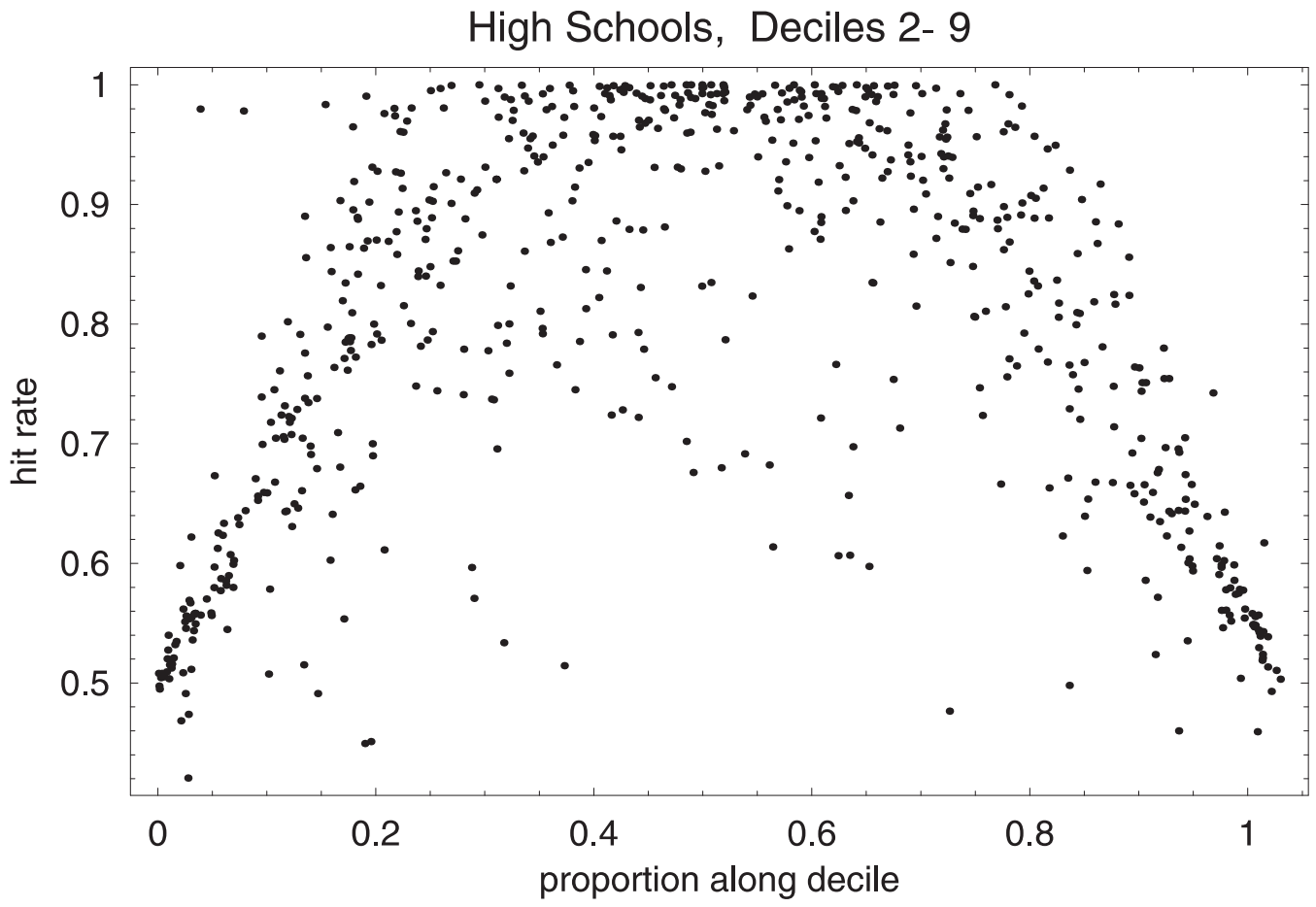
Decile	Median Hit-rate	Lower Quartile	Upper quartile
1	1.	0.983	1.
2	0.891	0.768	0.981
3	0.847	0.66	0.948
4	0.891	0.743	0.954
5	0.822	0.67	0.903
6	0.787	0.636	0.909
7	0.859	0.706	0.95
8	0.833	0.69	0.944
9	0.958	0.756	0.995
10	1.	0.97	1.

High Schools

Decile	Median Hit-rate	Lower Quartile	Upper quartile
1	1.	0.973	1.
2	0.974	0.756	0.995
3	0.888	0.745	0.97
4	0.773	0.602	0.914
5	0.808	0.641	0.903
6	0.778	0.599	0.911
7	0.787	0.691	0.931
8	0.837	0.704	0.94
9	0.889	0.643	0.982
10	1.	0.961	1.

Figure 3 Plots of API State Decile Hit Rates





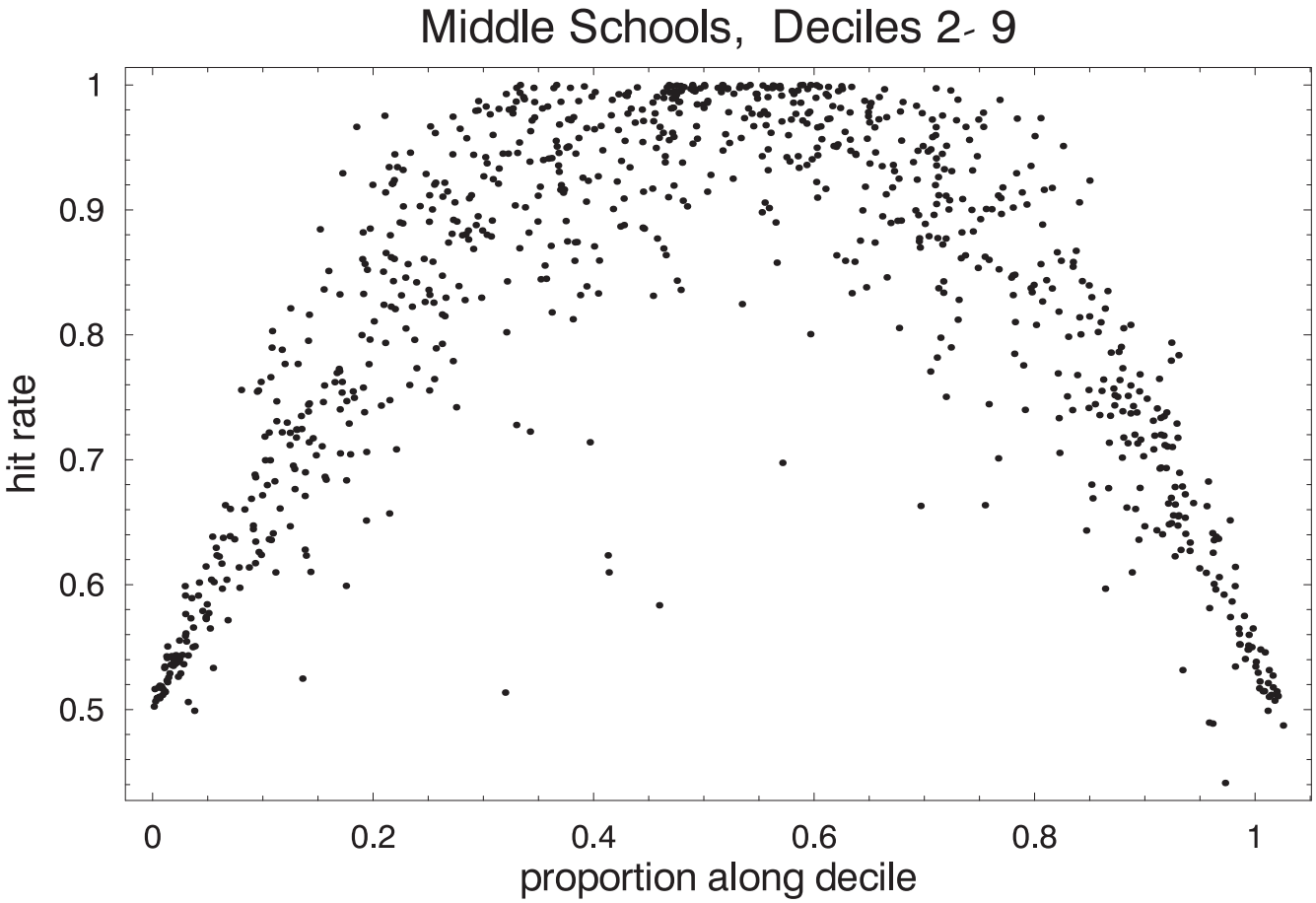
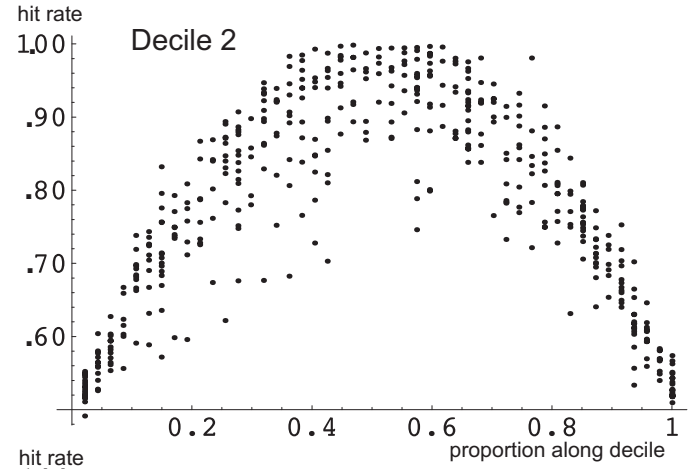
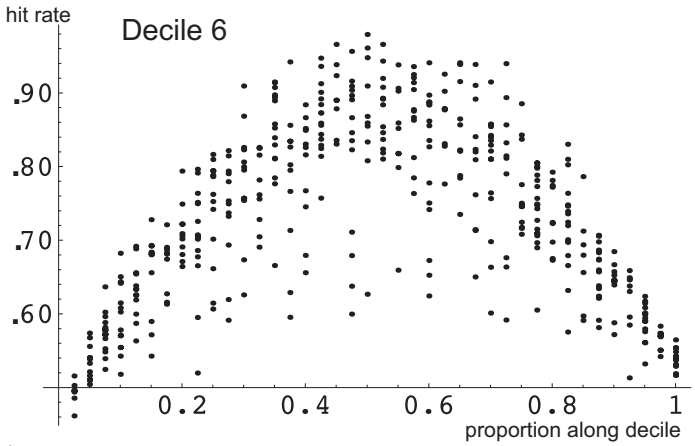
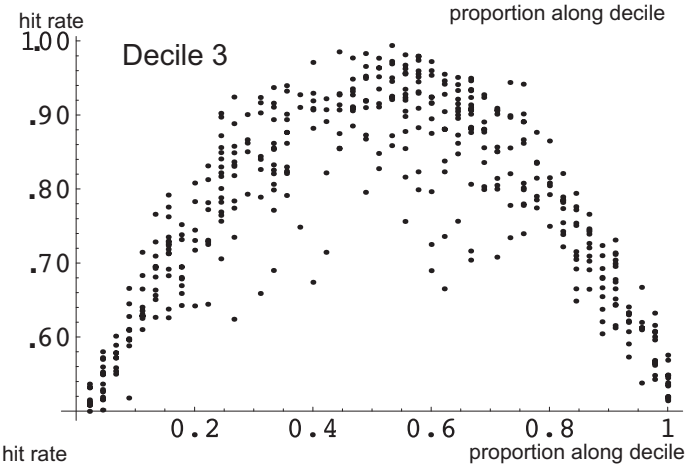

Middle Schools, Deciles 2- 9
hit rate
1
0.9
0.8
0.7
0.6
0.5
0
0.2
0.4
0.6
0.8
1
proportion along decile

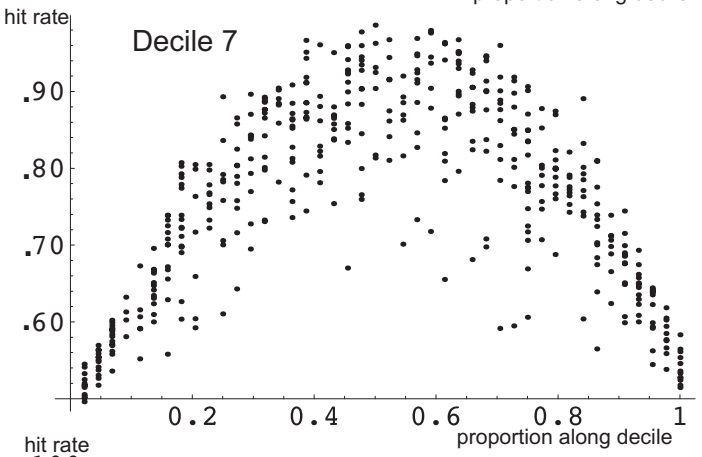
Figure 4 Plots of Decile Hit Rates by Decile

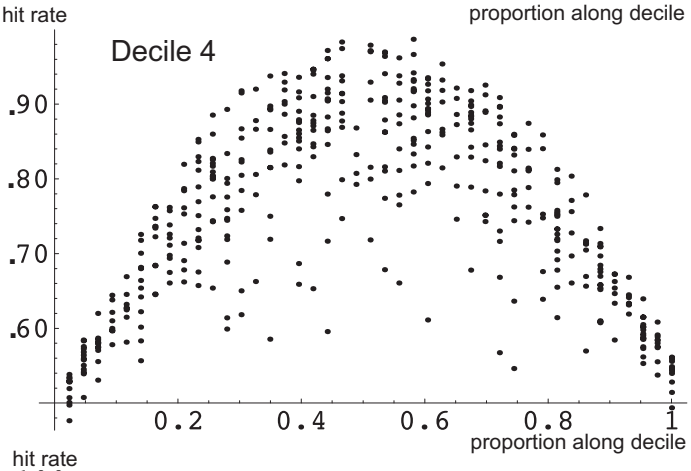
Elementary Schools, Hit Rate for Decile Rank by State Decile

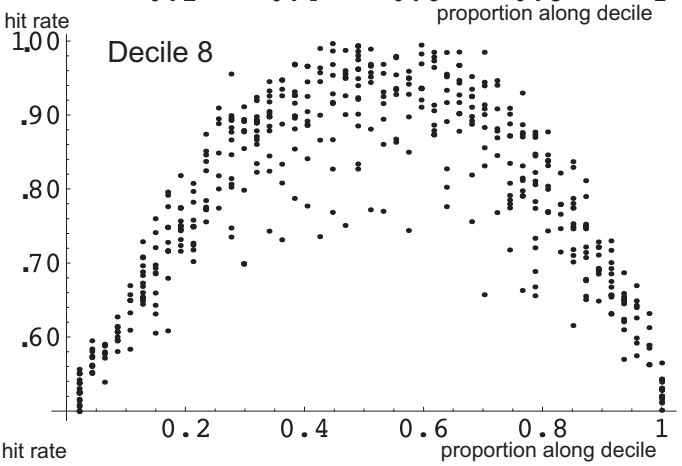


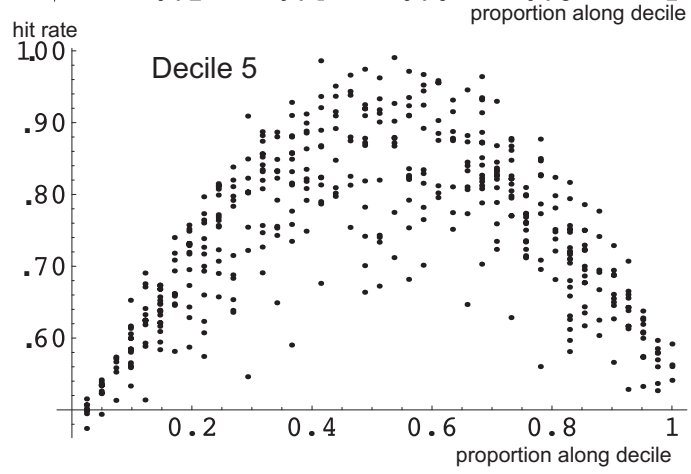


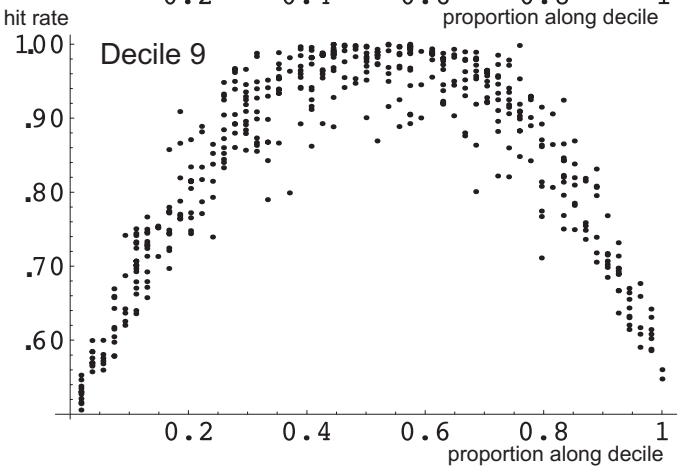




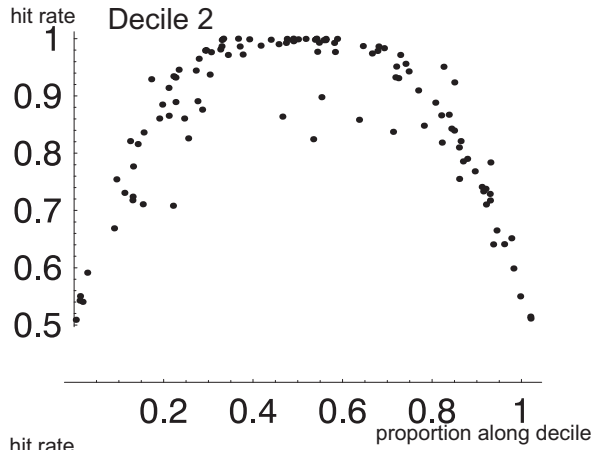


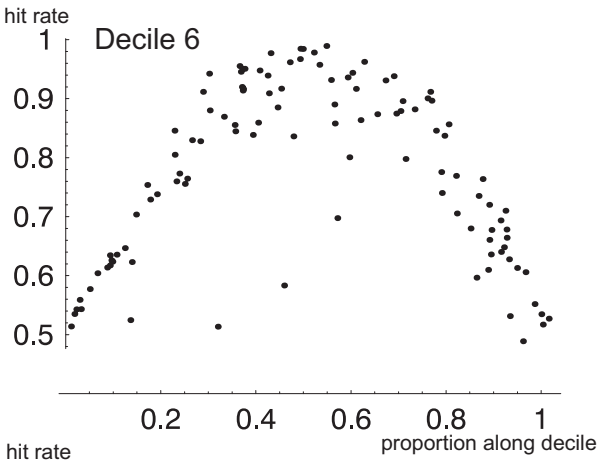


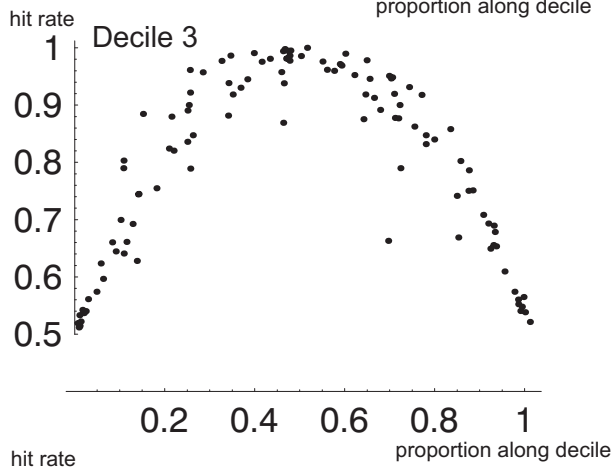


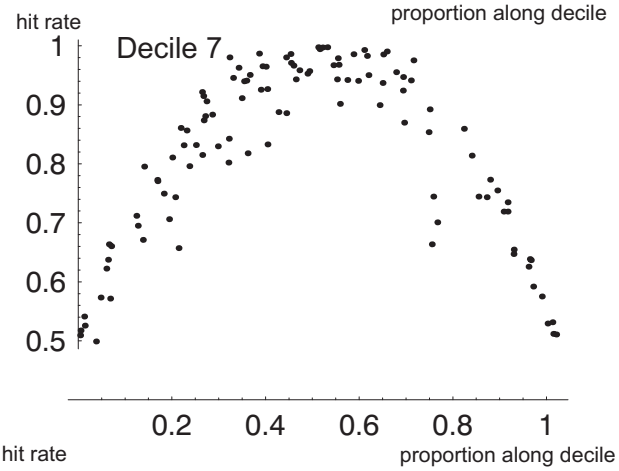


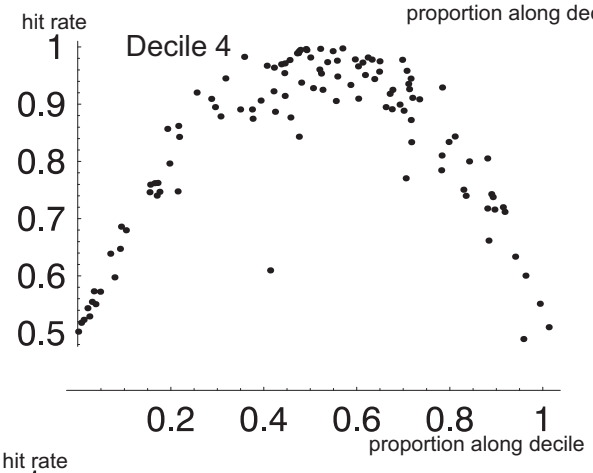
Middle Schools, Hit Rate for Decile Rank by State Decile

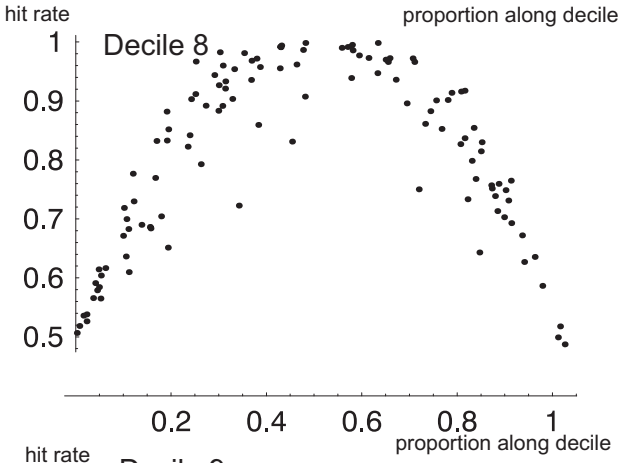


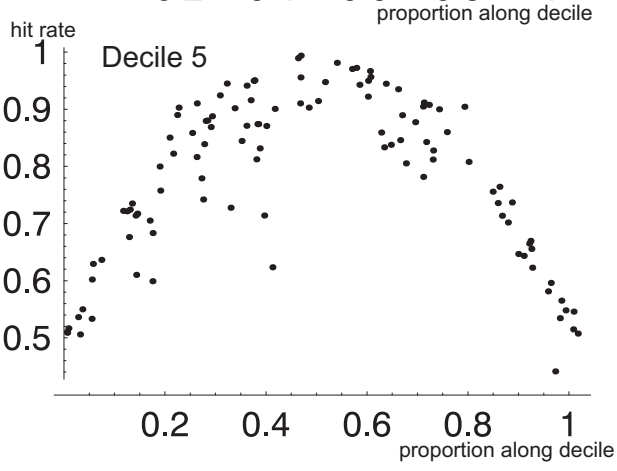


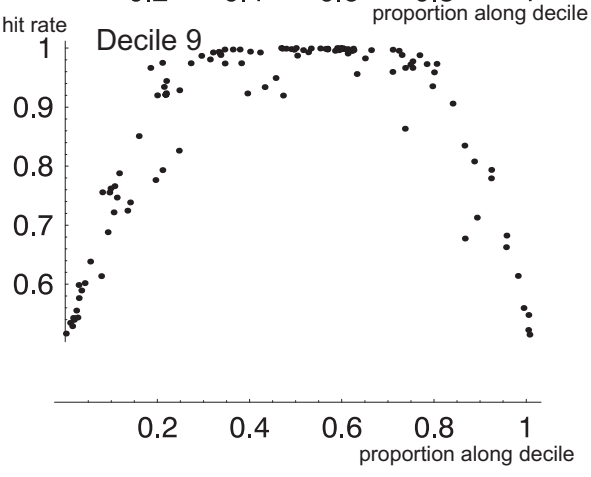




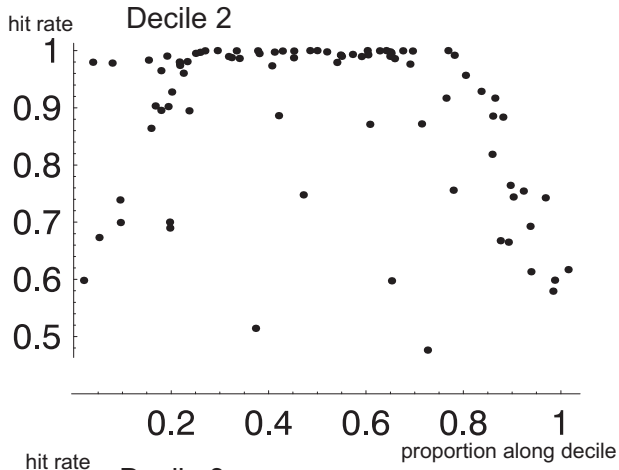


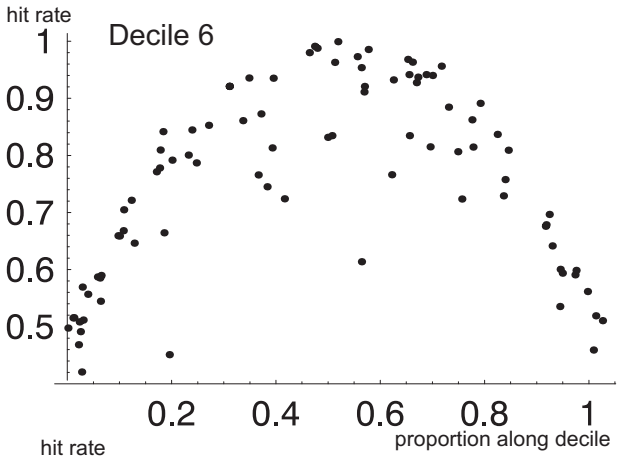


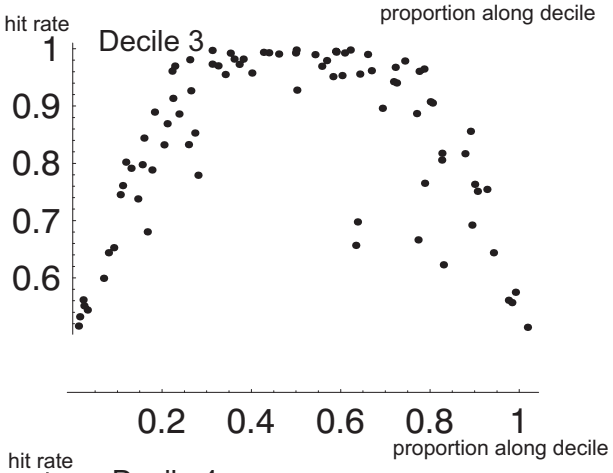


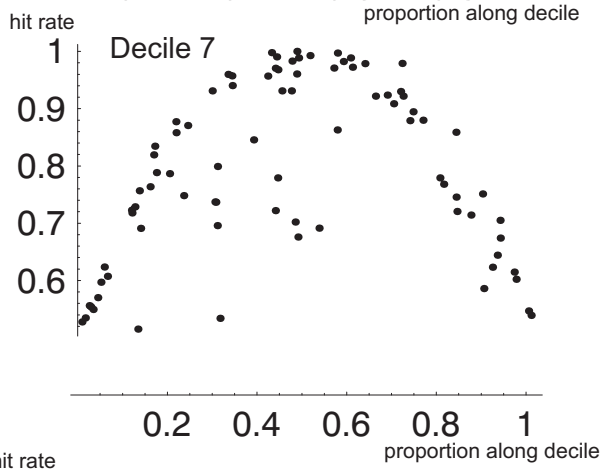


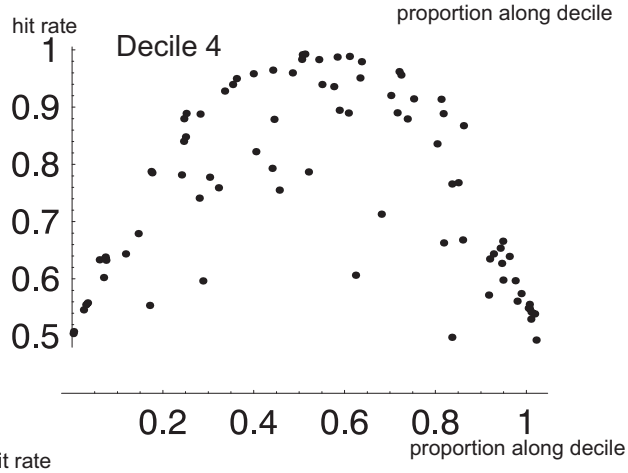
High Schools, Hit Rate for Decile Rank by State Decile

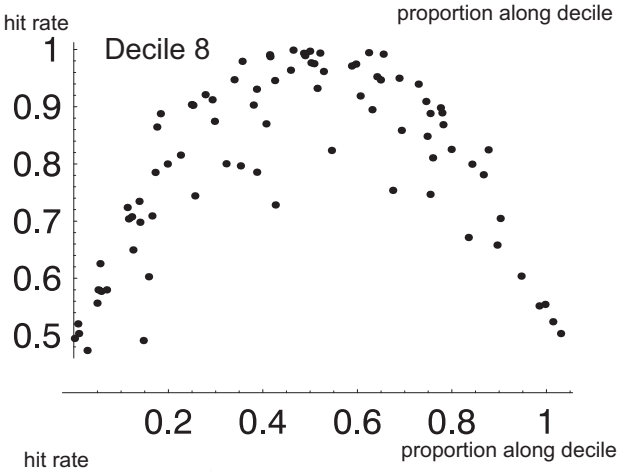


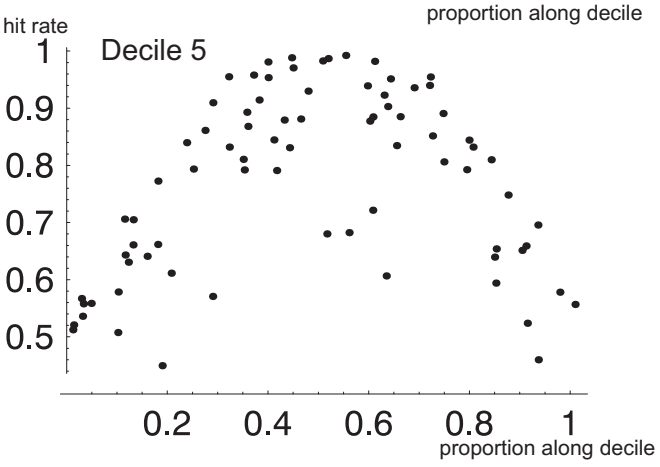


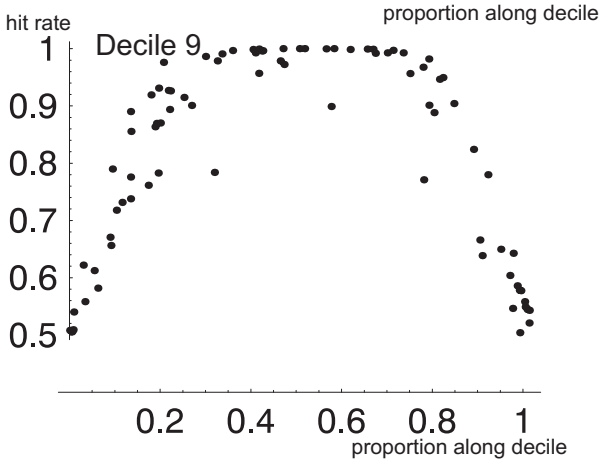












Further information of the accuracy of the decile ranks are obtained from Tables 5 and 7 (described in Part C) for the grid of elementary and high school examples. In these table the full distribution of the decile allocations for the bootstrap replications is shown (entries for CA01-CA10 are the percent of the 4000 bootstrap replications for target school API score falling in CA deciles 1 through 10). Almost all schools have bootstrap replications contained within two adjoining deciles, the only exceptions being the smallest schools category.

Part C. Properties of Similar Schools Rank.

The Similar Schools Rank in the API reports is obtained by comparing the target school's API score with the scores of the target school's 100 nearest neighbors on the SCI index (the "100 other schools with similar demographic characteristics" that are listed as Similar Schools on the API web-site). See the "Explanatory Notes for the Academic Performance Index" on the CDE site for details of the construction of similar schools list and the resulting similar schools rank. Those 100 similar schools can be grouped into bins of ten schools based on their API scores, and the Similar School Rank is assigned based on which (decile) bin contains the target school's API score. Descriptive data analysis for the similar schools rank is given in section 3D ("Explaining Similar School Decile Ranks and Links to State Deciles") of the "Year 2000 Update: Interpretive Notes for the Academic Performance Index" available from this page.

The accuracy question pursued for the similar schools rank is: What is the effect of the statistical variability (wobble) in the school API score on the similar schools rank? The accuracy of the use of the school API score to determine the reported similar schools rank depends upon both the uncertainty in the target school API score and the uncertainty in API scores of the 100 similar schools. A dual bootstrap procedure used to obtain category probabilities for the similar school ranks. That is, bootstrap replicates are obtained for both the target school and for that school's 100 similar schools, and a similar schools rank is computed for each of the (4000) bootstrap samples. The resulting distribution of the decile categories (see the SMxx-values in Tables 5 and 7) indicate the effects of statistical variability in the API scores on the reported similar schools rank.

The results (Tables 5 and 7) for the school examples (see example description in Tables 4 and 6) illustrate that the similar schools rank is best thought of as a plus-or-minus 1 decile “smear” from the reported rank. The different examples in Tables 5 and 7 show a variety of effects of statistical uncertainty on the similar schools rank; for example, ranks near 1 or 10 (at the ends of the scale) show less effects of uncertainty. The results for similar school rank is only reported for these grids of Elementary School and High School examples mainly because the dual bootstrap is computationally expensive (and also it's hard to summarize these accuracy results over collections of schools).

INSERT TABLES 4-7

Even the relatively large High Schools (Table 7) show considerable uncertainty in the similar schools rank. For example, in Table 7 for the "CA decile = 5, large n" frame the high school (CDS 36676783630035) has 1540 students and thus relatively small s.e.(API) = 5.91. Yet the hit rate for its similar schools rank of 5 is only .4; taking the plus-or-minus 1 decile “smear” from the reported rank, the probability (under this resampling calculation) that the similar schools rank would fall into 4, 5, or 6 is .884. The effects of statistical uncertainty are larger for smaller schools.

For a further example, in Table 5 for the "CA decile = 8, small n" frame the elementary school (CDS 30666216071138) has 250 students and thus relatively large s.e.(API) = 13.8. The hit rate for its similar schools rank of 6 is .29, (not that much smaller than that for the large high school). The plus-or-minus 1 decile “smear” from the reported rank contains probability .761 (i.e. the probability is .24 that statistical uncertainty moves the similar schools rank a distance more than 1 decile from the reported rank).

Examples for Selected Elementary and High Schools (Tables 4 and 6)

The structure of the examples is a 3 X 4 X 3 grid: API score (3 levels) by School Size (4 levels) by Similar Schools Rank (3 levels).

For the first factor school API score, schools are selected from state deciles 2, 5, 8.

For the second factor school size, schools were chosen at four levels of number of students (n) in the school included in that school's API. Schools were chosen at the 5th 25th 50th, and above 75th percentiles of the distribution of elementary school and high school API sizes (e.g. median number of students in elementary schools is 354).

	Elementary	High
smallest n 5th percentile	n ~ 150	n ~ 200
small n 25th percentile	n ~ 250	n ~ 630
medium n 50th percentile	n ~ 350	n ~ 1000
large n >75th percentile	n ~ 500	n ~ 1500

For the third factor, the Similar Schools Rank of the school, schools were chosen with values lower, middle, higher. Typical values used for the levels of similar schools rank were 3, 5, 8.

The listing of the 36 schools in Table 4 and 6 contains the following entries, providing basic attributes for each school.

CDS	School CDS Code
CDEN	Number of students reported on Research File
CDEAPI	API (integer) from Research Files
CDECARnk	CA Decile rank on API from Research Files
CDESmRnk	Similar Schools Decile rank on API from Research Files

Table 4 Grid of 36 Elementary School Examples 1999:
API Decile by Size by Similar Schools Rank

This listing of the 36 example schools contains the following entries, providing basic attributes for each school.

CDS	School CDS Code
CDEN	Number of students reported on Research File
CDEAPI	API (integer) from Research Files
CDECARnk	CA Decile rank on API from Research Files
CDESmRnk	Similar Schools Decile rank on API from Research Files

Low API (CA decile = 2)

CDS	CDEN	CDEAPI	CDECARnk	CDESmRnk
smallest n (5th percentile n ~ 150)				
19647336019822	154	474	2	3
38684786040778	135	494	2	5
10623806007074	151	493	2	7
small n (25th percentile n ~ 250)				
34674056033468	246	450	2	3
01612596001978	241	480	2	5
19648086020580	249	480	2	8
medium n (50th percentile n ~ 350)				
10621666006258	354	461	2	3
43694506047211	355	488	2	5
19644696012934	350	457	2	8
large n (>75th percentile n~500)				
24657716107908	498	457	2	3
19649076021786	494	463	2	6
37683386039523	492	496	2	8

Medium API (CA decile = 5)

CDS	CDEN	CDEAPI	CDECARnk	CDESmRnk
smallest n (5th percentile n ~ 150)				
17640556010672	148	606	5	3
01611436105316	146	620	5	5
19647336018766	157	624	5	8
small n (25th percentile n ~ 250)				
36679596037410	244	616	5	3
54720176054175	246	592	5	5
19644366012520	254	602	5	7
medium n (50th percentile n ~ 350)				
10621666006332	349	621	5	3
19643376011951	350	613	5	6
19646426014591	346	618	5	8
large n (>75th percentile n~500)				
23655656025100	486	602	5	3
19647336016786	499	594	5	5
30666216029805	502	587	5	7

Table 4 continued

CDS	CDEN	CDEAPI	CDECARnk	CDESmRnk
	High API (CA decile = 8)			
smallest n (5th percentile n ~ 150)				
19734456066757	141	739	8	4
38684786041131	139	736	8	6
12626796007637	147	752	8	9
small n (25th percentile n ~ 250)				
34674476034862	248	723	8	3
30666216071138	250	716	8	6
36678436036552	242	721	8	8
medium n (50th percentile n ~ 350)				
42692296045660	350	722	8	3
22655326025050	354	740	8	6
30736436030704	347	745	8	8
large n (>75th percentile n~500)				
19753096022735	501	737	8	3
33670336112957	517	718	8	5
19649986022685	500	752	8	7

Table 5 Accuracy of API, State Decile Rank and Similar Schools Decile Rank for Grid of 36 Elementary School Examples

Table Entries

School Descriptors From Research Files

CDS	School CDS code
CDEAPI	API (integer) from Research Files
SEAPI	Bootstrap standard error for school API
CDEN	Number of students reported on Research File
CDECARnk	CA Decile rank on API from Research Files
CDESmRnk	Similar Schools Decile rank on API from Research Files

Computed quantities from bootstrap replications

Accuracy of State Decile Rank

CA01
CA02
CA03
CA04 entries for CA01-CA10 are the percent
CA05 of bootstrap replications of target school falling in
CA06 CA deciles 1 through 10. (4000 bootstrap replications)
CA07
CA08
CA09
CA10

Accuracy of Similar Schools Decile Rank

SM01
SM02
SM03
SM04 entries for SM01-SM10 are the percent
SM05 of bootstrap replications--both target school and
SM06 collection of 100 similar schools--resulting in a similar
SM07 schools decile rank 1-10 (4000 bootstrap replications)
SM08
SM09
SM10

Elementary 1999 CA decile = 2, smallest n (5th percentile n ~ 150)

CDS	19647336019822	38684786040778	10623806007074
CDEAPI	474	494	493
SEAPI	19.01	19.27	18.71
CDEN	154	135	151
CDECARnk	2	2	2
CDESmRnk	3	5	7
CA01	8.25	0.875	0.675
CA02	79.075	56.025	57.175
CA03	12.675	42.4	41.575
CA04	0	0.7	0.575
CA05	0	0	0
CA06	0	0	0
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	3.35	0.075	0
SM02	17.35	2.3	0
SM03	39.725	13.825	0.3
SM04	24.4	32.825	3.075
SM05	9.875	27.175	6.825
SM06	4.525	15.575	20.4
SM07	0.75	5.6	26.575
SM08	0.025	2.3	23.125
SM09	0	0.325	18.4
SM10	0	0	1.3

Elementary 1999 CA decile = 2, small n (25th percentile n ~ 250)

CDS	34674056033468	01612596001978	19648086020580
CDEAPI	450	480	480
SEAPI	15.69	15.98	14.31
CDEN	246	241	249
CDECARnk	2	2	2
CDESmRnk	3	5	8
CA01	45.225	2.15	1.375
CA02	54.6	82.8	85.65
CA03	0.175	15.025	12.975
CA04	0	0.025	0
CA05	0	0	0
CA06	0	0	0
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	7.225	0.05	0
SM02	35.2	1.975	0
SM03	38.125	13.275	0
SM04	14.9	26.425	0.025
SM05	3.7	25.85	0.2
SM06	0.825	21.35	2.125
SM07	0	8.05	16.525
SM08	0.025	2.675	46.425
SM09	0	0.35	30.625
SM10	0	0	4.075

Elementary 1999 CA decile = 2, medium n (50th percentile n ~ 350)

CDS	10621666006258	43694506047211	19644696012934
CDEAPI	461	488	457
SEAPI	12.34	12.81	11.62
CDEN	354	355	350
CDECARnk	2	2	2
CDESmRnk	3	5	8
CA01	15.45	0.025	22.15
CA02	84.35	75.35	77.8
CA03	0.2	24.625	0.05
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	1.175	0	0
SM02	24.95	0.1	0
SM03	48.7	4.925	0
SM04	23.325	20.25	0.1
SM05	1.8	34.025	0.825
SM06	0.05	30	5.9
SM07	0	9.45	22.1
SM08	0	1.25	47.725
SM09	0	0	22.95
SM10	0	0	0.4

Elementary 1999 CA decile = 2, large n (>75th percentile n ~ 500)

CDS	24657716107908	19649076021786	37683386039523
CDEAPI	457	463	496
SEAPI	12.37	9.49	10.7
CDEN	498	494	492
CDECARnk	2	2	2
CDESmRnk	3	6	8
CA01	25.325	6.925	0
CA02	74.6	93.05	53.925
CA03	0.075	0.025	46.075
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	2.25	0	0
SM02	35	0	0
SM03	45.675	0	0
SM04	16	0.5	0
SM05	1.075	10.5	0.075
SM06	0	45.5	1.85
SM07	0	35.15	15.75
SM08	0	7.925	45.875
SM09	0	0.425	33.875
SM10	0	0	2.575

Elementary 1999 CA decile = 5, smallest n (5th percentile n ~ 150)

CDS	17640556010672	01611436105316	19647336018766
CDEAPI	606	620	624
SEAPI	19.98	21.46	18.52
CDEN	148	146	157
CDECARnk	5	5	5
CDESmRnk	3	5	8
CA01	0	0	0
CA02	0	0	0
CA03	0.125	0.075	0
CA04	17.375	5.55	2.025
CA05	69.925	60.375	57.175
CA06	12.55	33.15	40.05
CA07	0.025	0.85	0.75
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	9.925	0.975	0
SM02	31.625	4.125	0.025
SM03	31.575	15.125	0.175
SM04	16.475	24.75	1.95
SM05	8.1	29.325	7.25
SM06	1.725	16.925	12.4
SM07	0.525	6.825	28.75
SM08	0.05	1.6	32.45
SM09	0	0.35	13.375
SM10	0	0	3.625

Elementary 1999 CA decile = 5, small n (25th percentile n ~ 250)

CDS	36679596037410	54720176054175	19644366012520
CDEAPI	616	592	602
SEAPI	14.5	16.25	13.96
CDEN	244	246	254
CDECARnk	5	5	5
CDESmRnk	3	5	7
CA01	0	0	0
CA02	0	0	0
CA03	0	0.075	0
CA04	2.475	36.75	12.925
CA05	78.425	61.925	84.1
CA06	19.1	1.25	2.975
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	1.575	0.1	0
SM02	18.875	3.7	0
SM03	30.575	10.8	0.075
SM04	27.975	29.325	0.925
SM05	16.5	26.05	7.9
SM06	3.975	23.125	23.975
SM07	0.475	6.025	28.25
SM08	0.05	0.825	31
SM09	0	0.05	7.85
SM10	0	0	0.025

Elementary 1999 CA decile = 5, medium n (50th percentile n ~ 350)

CDS	10621666006332	19643376011951	19646426014591
CDEAPI	621	613	618
SEAPI	13.29	13.88	13.25
CDEN	349	350	346
CDECARnk	5	5	5
CDESmRnk	3	6	8
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	0.775	2.525	0.85
CA05	71.35	84.075	77.425
CA06	27.875	13.4	21.725
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	0.5	0	0
SM02	17.775	0.025	0
SM03	41.85	0.4	0
SM04	29.5	3.175	0
SM05	9.225	13.925	0
SM06	1.1	40.525	0.55
SM07	0.05	27.2	8.3
SM08	0	12.225	39.55
SM09	0	2.475	46.05
SM10	0	0.05	5.55

Elementary 1999 CA decile = 5, large n (>75th percentile n ~ 500)

CDS	23655656025100	19647336016786	30666216029805
CDEAPI	602	594	587
SEAPI	11.26	10.85	11.47
CDEN	486	499	502
CDECARnk	5	5	5
CDESmRnk	3	5	7
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	8.95	24.775	48.225
CA05	90.1	75.2	51.75
CA06	0.95	0.025	0.025
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	0.55	0	0
SM02	23.25	0.025	0
SM03	46.025	0.925	0.025
SM04	22.425	9.475	0.875
SM05	6.05	48.225	10.425
SM06	1.625	35.975	30.9
SM07	0.05	4.95	39.075
SM08	0.025	0.425	17.575
SM09	0	0	1.125
SM10	0	0	0

Elementary 1999 CA decile = 8, smallest n (5th percentile n ~ 150)

CDS	19734456066757	38684786041131	12626796007637
CDEAPI	739	736	752
SEAPI	20.03	20.27	18.58
CDEN	141	139	147
CDECARnk	8	8	8
CDESmRnk	4	6	9
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0	0.025	0
CA07	12.1	14.65	2.6
CA08	76.4	76	68.475
CA09	11.475	9.325	28.925
CA10	0.025	0	0
SM01	2.85	0	0
SM02	14.525	0.55	0
SM03	23.15	2.8	0
SM04	29.375	8.525	0.05
SM05	15.975	18.8	0.025
SM06	8.5	29.825	0.55
SM07	4.075	21.55	2.375
SM08	1.275	10.775	14.425
SM09	0.25	6.175	47.15
SM10	0.025	1	35.425

Elementary 1999 CA decile = 8, small n (25th percentile n ~ 250)

CDS	34674476034862	30666216071138	36678436036552
CDEAPI	723	716	721
SEAPI	14.8	13.78	13.36
CDEN	248	250	242
CDECARnk	8	8	8
CDESmRnk	3	6	8
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0.025	0	0
CA07	27.25	45.15	30.975
CA08	72.425	54.85	69
CA09	0.3	0	0.025
CA10	0	0	0
SM01	4.275	0	0
SM02	15.6	0.475	0
SM03	27.55	4.35	0
SM04	28.725	9.8	0.2
SM05	16.575	27.475	1.875
SM06	5.75	29.05	6.275
SM07	1.4	19.6	24.075
SM08	0.125	8.375	45.85
SM09	0	0.875	21.025
SM10	0	0	0.7

Elementary 1999 CA decile = 8, medium n (50th percentile n ~ 350)

CDS	42692296045660	22655326025050	30736436030704
CDEAPI	722	740	745
SEAPI	13.61	10.44	12.39
CDEN	350	354	347
CDECARnk	8	8	8
CDESmRnk	3	6	8
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	27.775	0.95	0.825
CA08	71.975	97.875	92.05
CA09	0.25	1.175	7.125
CA10	0	0	0
SM01	4.375	0	0
SM02	21.975	0	0
SM03	33.025	0.45	0
SM04	26.9	5.775	0.05
SM05	10.05	21.5	1.05
SM06	2.775	40.825	6.7
SM07	0.65	25.45	22.925
SM08	0.25	5.4	42.175
SM09	0	0.575	25.025
SM10	0	0.025	2.075

Elementary 1999 CA decile = 8, large n (>75th percentile n ~ 500)

CDS	19753096022735	33670336112957	19649986022685
CDEAPI	737	718	752
SEAPI	9.91	9.85	10.26
CDEN	501	517	500
CDECARnk	8	8	8
CDESmRnk	3	5	7
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	1.225	37.975	0
CA08	98.325	62.025	84.575
CA09	0.45	0	15.425
CA10	0	0	0
SM01	2.025	0	0
SM02	24.55	0.125	0.025
SM03	42.8	7.975	0.15
SM04	23.975	39.925	2.525
SM05	6.3	41.425	10.15
SM06	0.325	9.4	22.2
SM07	0.025	1.1	33.3
SM08	0	0.05	25.825
SM09	0	0	5.8
SM10	0	0	0.025

Table 6 Grid of 36 High School Examples 1999:
API Decile by Size by Similar Schools Rank

This listing of the 36 example schools contains the following entries, providing basic attributes for each school.

CDS	School CDS Code
CDEN	Number of students reported on Research File
CDEAPI	API (integer) from Research Files
CDECARnk	CA Decile rank on API from Research Files
CDESmRnk	Similar Schools Decile rank on API from Research Files

Low API (CA decile = 2)

CDS	CDEN	CDEAPI	CDECARnk	CDESmRnk
smallest n (5th percentile n ~ 200)				
10755981030535	223	517	2	3
13631071332501	254	509	2	7
06616140635250	217	512	2	9
small n (25th percentile n ~ 630)				
10739991033430	623	501	2	3
19644691932482	628	503	2	6
27660682732170	687	516	2	9
medium n (50th percentile n ~ 1000)				
30664313034204	1140	519	2	2
36676523633906	1128	485	2	5
56725465632849	1100	490	2	7
large n (>75th percentile n~1500)				
37684113738234	1730	512	2	3
33670583333192	1571	478	2	5
30664313030228	1530	486	2	8

Medium API (CA decile = 5)

CDS	CDEN	CDEAPI	CDECARnk	CDESmRnk
smallest n (5th percentile n ~ 200)				
15636851530997	236	597	5	4
19752911996016	200	606	5	8
12629011234004	203	599	5	10
small n (25th percentile n ~ 630)				
43694014336137	600	615	5	1
48705324832259	635	603	5	5
19647331932888	626	595	5	10
medium n (50th percentile n ~ 1000)				
07617540737809	1061	604	5	2
15635291530708	1115	609	5	3
37683383734431	1108	599	5	9
large n (>75th percentile n~1500)				
10621661032911	1511	592	5	3
36676783630035	1540	605	5	5
19647331931864	1669	604	5	9

Table 6 continued

CDS	CDEN	CDEAPI	CDECARnk	CDESmRnk
High API (CA decile = 8)				
smallest n (5th percentile n ~ 200)				
32669693235603	206	687	8	4
32669693232006	256	696	8	7
37681063731114	304	703	8	10
small n (25th percentile n ~ 630)				
45701364537304	700	688	8	3
56726035630322	625	706	8	6
41688904132817	659	714	8	8
medium n (50th percentile n ~ 1000)				
19643291931088	1082	687	8	4
33751923330743	1171	698	8	6
37683043735974	1085	701	8	8
large n (>75th percentile n~1500)				
38684783833241	1463	684	8	2
36678433635042	1481	705	8	6
48705734830089	1461	690	8	9

Table 7 Accuracy of API, State Decile Rank and Similar Schools Decile Rank for Grid of 36 High School Examples

Table Entries

School Descriptors From Research Files

CDS	School CDS code
CDEAPI	API (integer) from Research Files
SEAPI	Bootstrap standard error for school API
CDEN	Number of students reported on Research File
CDECARnk	CA Decile rank on API from Research Files
CDESmRnk	Similar Schools Decile rank on API from Research Files

Computed quantities from bootstrap replications

Accuracy of State Decile Rank

CA01
CA02
CA03
CA04 entries for CA01-CA10 are the percent
CA05 of bootstrap replications of target school falling in
CA06 CA deciles 1 through 10. (4000 bootstrap replications)
CA07
CA08
CA09
CA10

Accuracy of Similar Schools Decile Rank

SM01
SM02
SM03
SM04 entries for SM01-SM10 are the percent
SM05 of bootstrap replications--both target school and
SM06 collection of 100 similar schools--resulting in a similar
SM07 schools decile rank 1-10 (4000 bootstrap replications)
SM08
SM09
SM10

High Schools 1999 CA decile = 2, smallest n (5th percentile n ~ 200)

CDS	10755981030535	13631071332501	06616140635250
CDEAPI	517	509	512
SEAPI	13.7	12.7	15.9
CDEN	223	254	217
CDECARnk	2	2	2
CDESmRnk	3	7	9
CA01	0.1	0.45	1.04
CA02	66.88	86.97	74.93
CA03	32.95	12.58	23.85
CA04	0.07	0	0.18
CA05	0	0	0
CA06	0	0	0
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	6.99	0	0
SM02	28.84	0.08	0.02
SM03	24.56	0.83	0.22
SM04	18.33	3.64	1.04
SM05	11.09	8.94	2.42
SM06	7.69	19.9	4.88
SM07	2.05	31.66	12.77
SM08	0.43	28.06	25.67
SM09	0.02	6.33	40.34
SM10	0	0.56	12.64

High Schools 1999 CA decile = 2, small n (25th percentile n ~ 630)

CDS	10739991033430	19644691932482	27660682732170
CDEAPI	501	503	516
SEAPI	8.93	8.73	8.55
CDEN	623	628	687
CDECARnk	2	2	2
CDESmRnk	3	6	9
CA01	0.16	0.05	0
CA02	99.14	98.91	81.45
CA03	0.7	1.04	18.55
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	0.29	0	0
SM02	8.69	0.2	0
SM03	35.47	2.42	0
SM04	33.89	12.41	0
SM05	15.94	32.18	0.03
SM06	5.04	33.34	0.34
SM07	0.66	16.94	5.07
SM08	0.02	2.42	24.3
SM09	0	0.08	62.66
SM10	0	0.01	7.6

High Schools 1999 CA decile = 2, medium n (50th percentile n ~ 1000)

CDS	30664313034204	36676523633906	56725465632849
CDEAPI	519	485	490
SEAPI	6.47	6.66	6.63
CDEN	1140	1128	1100
CDECARnk	2	2	2
CDESmRnk	2	5	7
CA01	0	8.06	1.27
CA02	76.61	91.94	98.73
CA03	23.39	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	31.82	0	0
SM02	56.1	0.22	0
SM03	11.04	5.41	0.04
SM04	1.03	27.05	1.97
SM05	0.01	32.45	12.81
SM06	0	26.75	30.56
SM07	0	7.58	39.63
SM08	0	0.54	14.06
SM09	0	0	0.91
SM10	0	0	0.02

High Schools 1999 CA decile = 2, large n (>75th percentile n ~1500)

CDS	37684113738234	33670583333192	30664313030228
CDEAPI	512	478	486
SEAPI	5.39	5.24	5.14
CDEN	1730	1571	1530
CDECARnk	2	2	2
CDESmRnk	3	5	8
CA01	0	32.22	2.38
CA02	98.49	67.78	97.62
CA03	1.51	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	0.03	0	0
SM02	5.12	0.04	0
SM03	48.9	3.28	0
SM04	38.29	28.85	0
SM05	7.18	48.43	0
SM06	0.47	16.73	0.56
SM07	0.01	2.57	12.23
SM08	0	0.1	49.14
SM09	0	0	36.17
SM10	0	0	1.9

High Schools 1999 CA decile = 5, smallest n (5th percentile n ~ 200)

CDS	15636851530997	19752911996016	12629011234004
CDEAPI	597	606	599
SEAPI	13.76	16.05	16.2
CDEN	236	200	203
CDECARnk	5	5	5
CDESmRnk	4	8	10
CA01	0	0	0
CA02	0	0	0
CA03	0.47	0.24	0.94
CA04	33.64	18.65	30.83
CA05	60.36	62.08	57.78
CA06	5.53	18.73	10.36
CA07	0	0.3	0.09
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	2.84	0	0
SM02	12.51	0.07	0
SM03	19.21	0.29	0
SM04	18.58	1.48	0
SM05	18.18	3.9	0
SM06	14.69	8.38	0
SM07	8.48	15.59	0.02
SM08	3.68	31.77	0.3
SM09	1.54	27.72	11.68
SM10	0.29	10.8	88

High Schools 1999 CA decile = 5, small n (25th percentile n ~ 630)

CDS	43694014336137	48705324832259	19647331932888
CDEAPI	615	603	595
SEAPI	10.36	9.86	8.46
CDEN	600	635	626
CDECARnk	5	5	5
CDESmRnk	1	5	10
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	1.4	11.35	34.98
CA05	66.83	83.36	64.88
CA06	31.75	5.29	0.14
CA07	0.02	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	100	0.07	0
SM02	0	2.4	0
SM03	0	9.78	0
SM04	0	19.17	0
SM05	0	29.9	0
SM06	0	23.27	0
SM07	0	11.11	0
SM08	0	3.54	0.18
SM09	0	0.72	29.53
SM10	0	0.04	70.29

High Schools 1999 CA decile = 5, medium n (50th percentile n ~ 1000)

CDS	07617540737809	15635291530708	37683383734431
CDEAPI	604	609	598.92822266
SEAPI	7.54	7.93	6.9792890616
CDEN	1061	1115	1108
CDECARnk	5	5	5
CDESmRnk	2	3	9
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	4.39	1.29	14.3
CA05	93.36	88.55	85.51
CA06	2.25	10.16	0.19
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	17.55	0.65	0
SM02	57.48	11.25	0
SM03	23.49	32.83	0
SM04	1.45	35.68	0
SM05	0.03	16.31	0
SM06	0	3.08	0.09
SM07	0	0.2	3.51
SM08	0	0	36.63
SM09	0	0	52.24
SM10	0	0	7.53

High Schools 1999 CA decile = 5, large n (>75th percentile n ~1500)

CDS	10621661032911	36676783630035	19647331931864
CDEAPI	592	605	604
SEAPI	6.13	5.91	6.18
CDEN	1511	1540	1669
CDECARnk	5	5	5
CDESmRnk	3	5	9
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	44.16	1.03	2.74
CA05	55.83	98.16	96.82
CA06	0.01	0.81	0.44
CA07	0	0	0
CA08	0	0	0
CA09	0	0	0
CA10	0	0	0
SM01	6.22	0	0
SM02	42.14	0.12	0
SM03	41.3	3.47	0
SM04	9.45	18.34	0
SM05	0.87	39.97	0
SM06	0.01	30.06	0
SM07	0.01	7.22	0.62
SM08	0	0.77	20.7
SM09	0	0.05	64.23
SM10	0	0	14.45

High Schools 1999 CA decile = 8, smallest n (5th percentile n ~ 200)

CDS	32669693235603	32669693232006	37681063731114
CDEAPI	687	696	703
SEAPI	14.65	14.08	12.78
CDEN	206	256	304
CDECARnk	8	8	8
CDESmRnk	4	7	10
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0.52	0.03	0
CA07	35.62	16.61	5.28
CA08	60.82	73.76	75.55
CA09	3.04	9.6	19.17
CA10	0	0	0
SM01	1.44	0	0
SM02	6.26	0.23	0
SM03	15.43	2.03	0
SM04	24.05	6	0
SM05	19.04	18.33	0
SM06	10.96	22.23	0
SM07	11.3	14.96	0
SM08	8.91	21.25	0.06
SM09	2.08	11.04	3.08
SM10	0.53	3.93	96.86

High Schools 1999 CA decile = 8, small n (25th percentile n ~ 630)

CDS	45701364537304	56726035630322	41688904132817
CDEAPI	688	706	714
SEAPI	8.44	8.58	9.68
CDEN	700	625	659
CDECARnk	8	8	8
CDESmRnk	3	6	8
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	26.71	0.29	0.07
CA08	73.22	84.38	52.86
CA09	0.07	15.33	47.07
CA10	0	0	0
SM01	2.92	0	0
SM02	29.11	0.04	0
SM03	34.86	0.8	0.05
SM04	26.38	4.36	0.62
SM05	6.23	15.34	1.48
SM06	0.5	36.53	3.32
SM07	0	33.15	13.42
SM08	0	8.62	35.21
SM09	0	1.14	31.4
SM10	0	0.02	14.5

High Schools 1999 CA decile = 8, medium n (50th percentile n ~ 1000)

CDS	19643291931088	33751923330743	37683043735974
CDEAPI	687	698	701
SEAPI	7.04	6.22	7.07
CDEN	1082	1171	1085
CDECARnk	8	8	8
CDESmRnk	4	6	8
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	27.08	0.86	0.51
CA08	72.92	98.83	96.95
CA09	0	0.31	2.54
CA10	0	0	0
SM01	0.07	0	0
SM02	5.03	0.01	0
SM03	27.8	0.56	0
SM04	40.52	8.44	0.12
SM05	21.22	21.67	3.84
SM06	5.04	27.26	18.13
SM07	0.32	29.86	21.95
SM08	0	11.54	37.42
SM09	0	0.66	16.82
SM10	0	0	1.72

High Schools 1999 CA decile = 8, large n (>75th percentile n ~1500)

CDS	38684783833241	36678433635042	48705734830089
CDEAPI	684	705	690
SEAPI	5.43	6.12	6.0
CDEN	1463	1481	1461
CDECARnk	8	8	8
CDESmRnk	2	6	9
CA01	0	0	0
CA02	0	0	0
CA03	0	0	0
CA04	0	0	0
CA05	0	0	0
CA06	0	0	0
CA07	37.81	0.01	9.72
CA08	62.19	93.73	90.28
CA09	0	6.26	0
CA10	0	0	0
SM01	2.67	0	0
SM02	45.69	0.05	0
SM03	40.17	0.67	0
SM04	10.65	11.3	0
SM05	0.81	41.87	0
SM06	0.01	41.15	0.01
SM07	0	4.79	1.59
SM08	0	0.16	14.22
SM09	0	0.01	60.02
SM10	0	0	24.16

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Appendix: Data File Archive

A file in .sasbdat7 format containing the various accuracy quantities from this report along with a readme file for variable definitions can be obtained at

http://www-stat.stanford.edu/~rag/api/apiacc99.zip