Supplemental Material (Not Intended for Publication)

This document has two parts. First, we report omitted graphs and tables. Then, we report omitted details from the model in the Appendix.

Omitted Graphs and Tables

- The histograms with the frequency of schools with 1 to 19 ENEM takers in 2005 for each of the 21 metropolitan areas in our sample (Footnote 16).

- Difference in the impact of test score disclosure on the average 2005 ENEM score of schools between public and private schools (Footnote 17).

  In the table below we report the coefficient of the term $d_s \times priv_s$ in the benchmark specification (1) for the relationship between the number of ENEM takers in 2005 and the average 2005 ENEM score of schools. As in the main text, we consider three different choices of bandwidth: half the optimal bandwidth, the optimal bandwidth, and twice the optimal bandwidth. The coefficient is not statistically significant for all three choices of bandwidth.

Table S1: 2005 ENEM Regressions

	(1)	(2)	(3)
	Half Optimal BW=5.8	Optimal BW=11.7	Twice Optimal BW=23.4
Private School × Treatment	-0.147	0.042	0.041
	(0.103)	(0.079)	(0.067)
Observations	8,725	17,788	37,299
R-squared	0.384	0.387	0.404

Notes: (i) Source is ENEM microdata; (ii) $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$; (iii) We report the results of our regression discontinuity design estimates based on local linear regressions with triangular kernels and optimal bandwidth as suggested by Calonico et al. (2016); (iv) Covariates: gender, age, race, parental schooling, family income, teacher schooling, ratios of teachers, computers, and staff to students, and presence of science lab; (v) Metropolitan-area fixed effects in all columns; (vi) Standard errors are clustered at the school level.

- Differences in the observable characteristics of ENEM takers and schools in 2005 between treated and control schools (Footnote 18).

Table S2: Student Composition - 2005

	Public			Private		
	Coeff.	Stand. Error	# Obs.	Coeff.	Stand. Error	# Obs.
Male	0.025	0.038	4611	0.027	0.023	11738
Correct School Grade	-0.018	0.029	2278	-0.008	0.01	10323
White	-0.011	0.038	4611	0.027	0.024	10323
Father w/ College Degree	-0.015	0.011	5271	-0.026	0.021	9594
Mother w/ College Degree	-0.003	0.011	4611	0.009	0.022	11060
Income $<$ 10$\times$ Minimum Wage	-0.001	0.006	4611	0.000	0.023	9594

Notes: (i) Source is ENEM microdata; (ii) $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$; (iii) We report the results of our regression discontinuity design estimates based on local linear regressions with triangular kernels and optimal bandwidth as suggested by Calonico et al. (2016); (iv) Metropolitan-area fixed effects in all columns; (v) Covariates: gender, age, race, parental schooling, family income, teacher schooling, ratios of teachers, computers, and staff to students, and presence of science lab; (vi) Dependent variable not included as a covariate. (vii) Standard errors are clustered at the schools level.

Table S3: School Inputs - 2005

	Public			Private		
	Coeff.	Stand. Error	# Obs.	Coeff.	Stand. Error	# Obs.
Frac. of Teachers w/ College Degree	0.003	0.005	2278	-0.012	0.009	8796
Teacher-to-Student Ratio	0.000	0.006	3381	0.003	0.01	11060
Computer-to-Student Ratio	0.012	0.016	2278	0.012	0.047	10323
Staff-to-Student Ratio	0.029	0.053	2881	0.007	0.031	10323
Number of Students	15.288	23.421	2881	7.418	7.892	9594
Proportion of Takers	0.004	0.027	2726	-0.018	0.019	9412

Notes: (i) Source is ENEM microdata; (ii) $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$; (iii) We report the results of our regression discontinuity design estimates based on local linear regressions with triangular kernels and optimal bandwidth as suggested by Calonico et al. (2016); (iv) Metropolitan-area fixed effects in all columns; (v) Covariates: gender, age, race, parental schooling, family income, teacher schooling, ratios of teachers, computers, and staff to students, and presence of science lab; (vi) Dependent variable not included as a covariate; (vii) Standard errors are clustered at the school level.

- The impact of treatment on school mortality in the 2006-2007 period for public and private schools (Footnote 19).

Table S4: Prob. School Mortality

	Private	Public
Treatment	0.033	0.011
	(0.041)	(0.038)

Notes: (i) Source is ENEM microdata; (ii) $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$; (iii) School-level regression; (iv) We report the results of our regression discontinuity design estimates based on local linear regressions with triangular kernels and optimal bandwidth as suggested by Calonico et al. (2016); (v) Metropolitan-area fixed effects in all columns; (vi) Standard errors clustered at the metropolitan-area level.

- The impact of test score disclosure on the average 2008 ENEM scores of schools (Footnote 29).

Table S5: 2008 ENEM Regressions

VARIABLES	(1) Half optimal BW=6.1	(2) Optimal BW=12.2	(3) 2x Optimal BW=24.5
Private School × Treatment	-0.073	-0.002	0.009
	(0.112)	(0.083)	(0.066)
Observations	11,909	21,478	38,637
R-squared	0.389	0.392	0.406

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: (i) Source is ENEM microdata; (ii) $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$; (iii) Covariates: age, race, parental schooling, family income, teachers' schooling, ratios of teachers, computers, and staff to students, presence of science lab; (iv) Coefficients correspond to estimates of δ_Y in our benchmark specification (2); (v) Metropolitan-area fixed effects in all columns; (vi) Dependent variable not included in covariates.

References

Calonico, Sebastian, Matias D. Cattaneo, Max H. Farrel, and Rocio Titiunik, "Regression Discontinuity Designs Using Covariates," CeMMAP working papers CWP37/15, Working Paper - University of Michigan - Department of Economics July 2016.

Omitted Details from the Appendix

Here we show that for some choices of the revenue function $V(\overline{q})$, the difference between the average effort of treated private schools and the effort of control private schools is strictly increasing in λ. In what follows, we assume that $V'(\overline{q})$ is convex.

A straightforward application of the implicit function theorem to the first-order condition (2) shows that:

$$\frac{\partial e_h^*}{\partial \lambda} = \frac{V'(\theta_h + e_h^*)}{1 - \lambda V''(\theta_h + e_h^*)};$$
$$\frac{\partial e_\ell^*}{\partial \lambda} = \frac{V'(\theta_\ell + e_\ell^*)}{1 - \lambda V''(\theta_\ell + e_\ell^*)};$$
$$\frac{\partial e_0^*}{\partial \lambda} = \frac{V'(\mu\theta_h + (1-\mu)\theta_\ell + e_0^*)}{1 - \lambda V''(\mu\theta_h + (1-\mu)\theta_\ell + e_0^*)}.$$

Now observe that

$$\frac{\partial e_0^*}{\partial \lambda} = \frac{1}{\lambda} \cdot \frac{\mu\theta_\ell + (1-\mu)\theta_h + e_0^*}{1 - \lambda V''(\mu\theta_h + (1-\mu)\theta_\ell + e_0^*)} < \frac{1}{\lambda} \cdot \frac{\mu\theta_\ell + (1-\mu)\theta_h + \overline{e}}{1 - \lambda V''(\mu\theta_h + (1-\mu)\theta_\ell + \overline{e})},$$

where the equality follows from (2) and the inequality follows the fact that $e_0^* < \overline{e}$ and

$$x \mapsto \frac{x}{1 - \lambda V''(x)}$$

is strictly increasing in x when $V'(\overline{q})$ is convex. Consequently, if

$$x \mapsto \frac{x}{1 - \lambda V''(x)}$$

is also convex, then

$$\frac{\mu\theta_\ell + (1-\mu)\theta_h + \overline{e}}{1 - \lambda V''(\mu\theta_h + (1-\mu)\theta_\ell + \overline{e})} \leq \mu \frac{\theta_\ell + e_\ell^*}{1 - \lambda V''(\theta_\ell + e_\ell^*)} + (1-\mu) \frac{\theta_h + e_h^*}{1 - \lambda V''(\theta_h + e_h^*)},$$

and so

$$\frac{\partial e_0^*}{\partial \lambda} < \mu \frac{\partial e_\ell^*}{\partial \lambda} + (1-\mu) \frac{\partial e_h^*}{\partial \lambda} = \frac{\partial \overline{e}}{\partial \lambda}.$$