Bartik, Hershbein & Lachowska Online Appendices

Appendix A

Data

This appendix gives more information on our data, estimation sample, and variables.

1. KPS ADMINISTRATIVE RECORDS AND VARIABLE DEFINITIONS

Our main dataset is derived from administrative records of KPS students from the graduating classes of 2003 through 2013. From these data, we define graduates based on entry and exit codes provided by KPS.

From the KPS records, we obtain information about high school of graduation and student demographics, including sex, race/ethnicity (Native American, Black, Asian, Hispanic, or White), and participation in the federal assisted lunch program (a binary yes/no variable). We also obtain data for high school of graduation and academic variables (cumulative GPA, highest math class taken, the number of AP classes taken, and whether the student attended the Kalamazoo Area Mathematics and Science Center [KAMSC]). Except for lunch status, we observe each of these variables for every high school graduate. We do not observe lunch status for the class of 2003; instead, we impute this variable as described in section 1.2, below.

1.1 Definition of Kalamazoo Promise Eligibility

We use the KPS student entry and withdrawal records to construct our key explanatory variable, the indicator for whether a high school graduate is eligible for the Kalamazoo Promise. The KPS school tenure records go back to the 1996–1997 school year, which allows us to track continuous enrollment histories for most students, although earlier cohorts have truncated

histories. For example, for the high school class of 2003, we observe records back to sixth grade (if the student graduated on time), but not earlier.

For the graduates from the classes of 2003 through 2013, eligibility equals one if the student would have been eligible for any tuition subsidy (65 percent or more) if he or she resided in the district and had been continuously enrolled in KPS from before the fall count date in ninth grade. (For the graduates from the classes of 2003–2005, eligibility is assigned had the Kalamazoo Promise been in effect at that time.) If the student enrolled after the ninth-grade fall count date, or was not a district resident, we count that student as ineligible in accord with Promise rules.

In the post-Promise period (2006–2013), we can observe actual eligibility based on the administrative records directly from the Kalamazoo Promise. This allow us to observe the extent of discrepancies between the rules-based eligibility assignment and actual, observed assignment.

Appendix Table A1 compares Promise eligibility based on administrative data to Promise eligibility (observed eligibility) based on the continuous-enrollment rule and shows a close match: out of 3,947 observations in the post-Promise period, 3,400 are scored as eligible by both the rules algorithm and the administrative data and 371 are scored as ineligible by both the rules algorithm and the administrative data. Only 5 observations show eligibility under the rules algorithm but not in the administrative data. These cases appear to be special-education students who were not district residents; in our data, the special education code takes precedence over the code identifying resident status. For 171 observations, the algorithm finds that these students should not be eligible even though they apparently are. The majority of these are high-risk students who have moved in and out of KPS and thus had breaks in their continuous enrollment;[1]

[1] From conversations with the Promise administrators, these exceptions to the rules were apparently made to accommodate students who temporarily left KPS for behavioral or family issues, a rather disadvantaged group.

however, about one-third are students who successfully appealed their eligibility with Promise administrators.

Appendix Table A1: Eligibility and Ineligibility Comparison between Administrative Data and Continuous-Enrollment Assignment Algorithm in the Post-Promise Period

	Eligible by admin. data, ineligible by algorithm	Ineligible by admin. data, eligible by algorithm	Ineligible by both admin. data and algorithm	Eligible by both admin. data and algorithm	Total number of observations
Panel A: Class year					
2006	22	2	59	366	449
2007	28	1	41	434	504
2008	16	1	53	414	484
2009	31	1	45	389	466
2010	21	0	46	431	498
2011	26	0	48	433	507
2012	16	0	49	461	526
2013	11	0	30	472	513
Total	171	5	371	3,400	3,947
Panel B: Demographics					
Male	0.427	0.800	0.434	0.479	0.473
Black	0.678	0.200	0.536	0.403	0.427
Asian	0.018	0.000	0.038	0.026	0.027
Hispanic	0.094	0.000	0.078	0.074	0.076
White	0.211	0.800	0.334	0.486	0.460
Subs. lunch	0.813	0.600	0.663	0.534	0.558
High school 1	0.421	0.400	0.547	0.531	0.527
High school 2	0.298	0.400	0.337	0.401	0.391

1.2 Free or Reduced Lunch Program Participation in 2003

Because the KPS data do not record whether students participated in the federal assisted lunch program in 2003, we impute this variable using data from the other two pre-Promise years, 2004 and 2005. Using data for these two years, we predict the probability that a student is on the federal assisted lunch program by logistic regression of the lunch status dummy on a fully saturated (i.e., all possible interactions) vector of controls: gender, race/ethnicity, and high school indicator. The regression also includes achievement variables: cumulative school-year-

For example, among these 171 students, 81.3 percent are eligible for subsidized lunch, which is higher than the overall rate of 55.8.

level GPA as a cubic spline, cumulative AP classes taken, dummies for the highest math class taken, and a dummy for whether the student participated in the math and science magnet program.

We define a student as participating in the lunch program using the following two-step procedure. First, using a random-number generator, we create a variable that is uniformly distributed from 0 to 1. Second, we assign a student to the lunch program if the predicted value of a student's lunch-program participation probability exceeds his or her corresponding random-number value.

2. DESCRIPTION OF NSC DATA

The National Student Clearinghouse (NSC) is a nonprofit organization that tracks student enrollment at nearly all postsecondary institutions at which students can receive federal financial aid. Through the StudentTracker service, school districts can submit student names and birth dates, and NSC will match with their database and return postsecondary enrollment records. We obtained StudentTracker data from KPS covering the high school graduating classes of 2003 through 2013 and the enrollment periods of Fall 2003 through Spring 2014.

The data provide the college attended for each term's enrollment. They also record the intensity of enrollment (full-time, half-time, less than half-time, and whether the student withdrew). We also observe whether a credential was received, the type of credential, and the date of receipt. Together these data are used to construct our outcome variables.

We are able to match more than 97 percent of the KPS graduates in our data to NSC records (Appendix Table A2).[2] Of the unmatched, nearly half are from 2003: for this year, NSC

[2] Discrepancies between the two columns are primarily, but not exclusively, due to failed NSC matches. A very few additional graduates lacked core data, such as graduation date.

reports no graduates from KPS's alternative high school. Our estimates control for high school of graduation by year, so this exclusion is not problematic.

Appendix Table A2: Final Match Rates

Class year	Final Matched Estimation Sample	All KPS grads
2003	525	585
2004	551	552
2005	392	393
2006	449	457
2007	504	522
2008	484	501
2009	466	467
2010	498	500
2011	507	522
2012	526	531
2013	513	519
Total	5,415	5,549

Note: All KPS grads refer to graduates earning a regular high school diploma.

Although the match rate is high, the NSC has shortcomings. As detailed by Dynarski, Hemelt, and Hyman (2015), NSC data do not cover all colleges, especially in the earlier period, and some records are blocked because of student or school requests under the Family Educational Rights and Privacy Act (FERPA). They show that coverage ranged from about 83 percent of students in 2003 to 90 percent in 2011. For Michigan colleges, coverage was slightly lower than for the nation in 2003 and slightly higher in 2011. For-profit institutions have lower coverage than other institution types.

The most relevant coverage issue for this paper is for Kalamazoo Valley Community College (KVCC), the local public two-year school, which approximately one-third of KPS graduates attend. KVCC did not provide student records to NSC before 2005. As a substitute, we

obtained equivalent data for KPS graduates for the Summer 2003 through Summer 2005 period directly from KVCC upon special request, in cooperation with KPS and the Kalamazoo Promise. There are other schools for which NSC coverage began during our sample period, but none are (or were) attended in large numbers by KPS graduates.[3]

2.1 Construction of Outcome Variables

The NSC data contain the dates enrollment begins and ends for each college attended. We combine these data with dates of high school graduation to determine whether and what type of postsecondary institution was attended within different time frames of high school graduation. We do not count college enrollment that began before high school graduation (i.e., dual enrollment).

The NSC data do not contain the number of credits attempted or earned, but they do contain a measure of enrollment intensity: full-time, half-time, less than half-time, or withdrawn. For institutions on a semester system, we assign 12 credits, 6 credits, 3 credits, and 0 credits attempted to each of the categories, respectively. For institutions on a trimester or quarter system, we assign credits per term that are proportionally adjusted to accord with the semester system over a standard academic year. We determine timing based on enrollment end dates and high school graduation dates, as above. The credit assignments are approximations, but as long as actual credits attempted to do not differentially vary by eligibility over time, our estimates should not be biased. The NSC data also provide the type and date of degrees or credentials earned, separately from enrollment.

[3] Within Michigan, coverage for Wayne State University (four-year public) and Washtenaw Community College (two-year public) began in 2004, Michigan Tech University (four-year public) began in 2008, Baker College of Flint and Davenport University (both four-year private nonprofit) began in 2009, and Everest Institute of Kalamazoo (four-year for-profit) began in 2011. Outside of Michigan, coverage for the University of Phoenix began in 2006.

Appendix B

In- and Out-Migration Before and After the Promise

In this appendix, we reproduce part of the analysis of examining in- and out-migration before and after the Promise from the paper "A Second Look at Enrollment Changes after the Kalamazoo Promise" (Hershbein 2013). Figures 1 and 2 from that paper (presented below) show that in-migration increased only in the year immediately following the Promise announcement, and only for grades K–9 (Promise-eligible grades). Exit rates permanently fell after the Promise, but to a lesser extent in the high school grades.

Moreover, in terms of student composition, Hershbein (2013) shows that while the new students who entered KPS in 2006—the year after the announcement—were more socioeconomically advantaged than previous new students, this selection was relatively modest. Whereas previous new entrants were highly disadvantaged, the new entrants in 2006 more closely resembled incumbent students (who still were well below the state average on test scores and income proxies). For example, Figure 8 from that paper, also reproduced below, shows no systematic change in standardized math or reading scores among third through eighth graders before and after the Promise, when comparing incumbent students ("stayers") to new entrants into the district.

Additionally, there is suggestive evidence of slight positive selection on exiting students. Hershbein concludes (p. 32): "While the Promise may have attracted students from a greater socioeconomic stratum, its effectiveness at keeping them is more subdued. Because exit rates fell overall, more of these types of students stayed in the district, although poorer students were even more likely to stay. As these changes were too small to affect the makeup of the student body as

a whole, composition is likely to play a minimal role in macro effects from Promise-type programs."

Consequently, selective migration should not be a major issue. While it would be desirable to test whether the Promise affects high school graduation, such a test is difficult due to the nature of the program, as anyone who begins in KPS in ninth grade is presumed Promise eligible. Moreover, to the extent that the Promise does affect high school graduation, it is logically more likely to do so for eligible students at the margin, for whom the Promise would increase the option value of graduation. However, such students are likely to lead to negative selection into the eligible population post-Promise, biasing our estimates downward.

References

Hershbein, Brad. 2013. "A Second Look at Enrollment Changes after the Kalamazoo Promise." Upjohn Institute Working Paper No. 200. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Figures 1, 2, and 8 from Hershbein, Brad J. 2013. "A Second Look at Enrollment Changes after the Kalamazoo Promise." Upjohn Institute Working Paper 13-200.

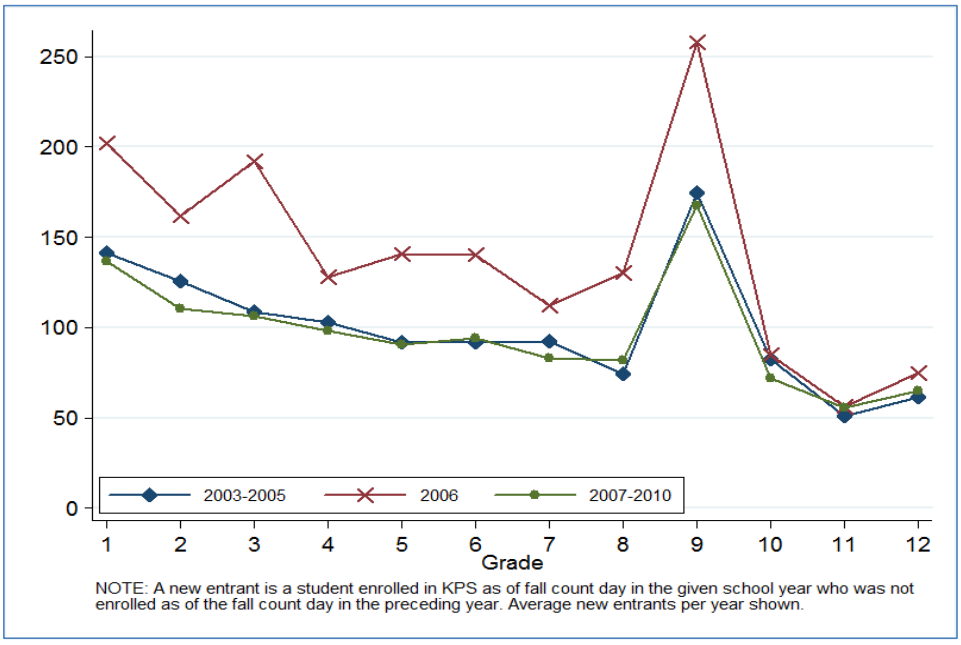


Figure 1 New Fall Student Entrants to KPS, by Grade and Year Interval

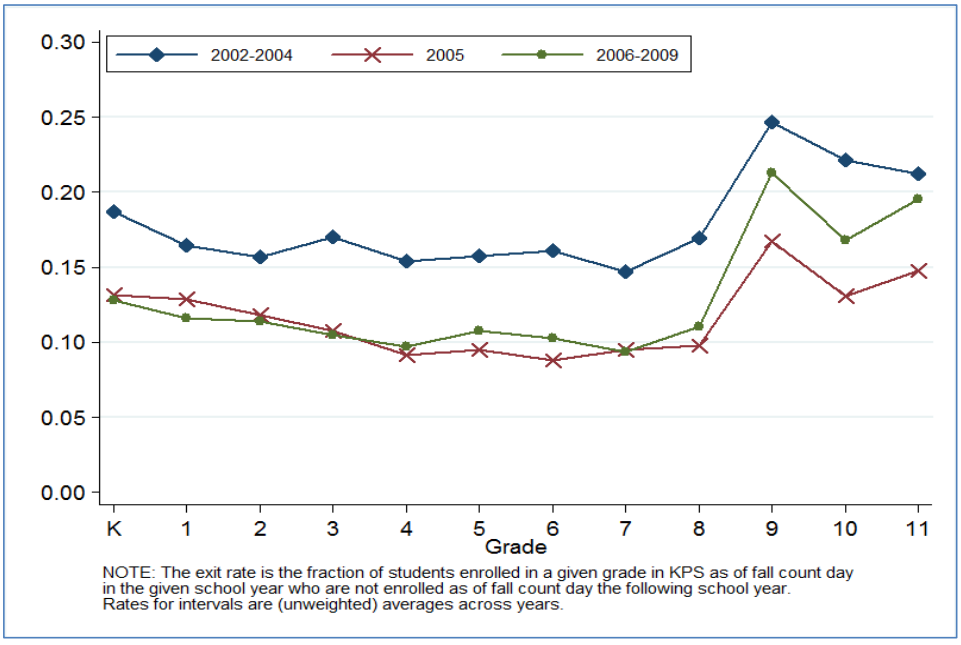


Figure 2 Student Exit Rates from KPS, by Grade and Year Interval

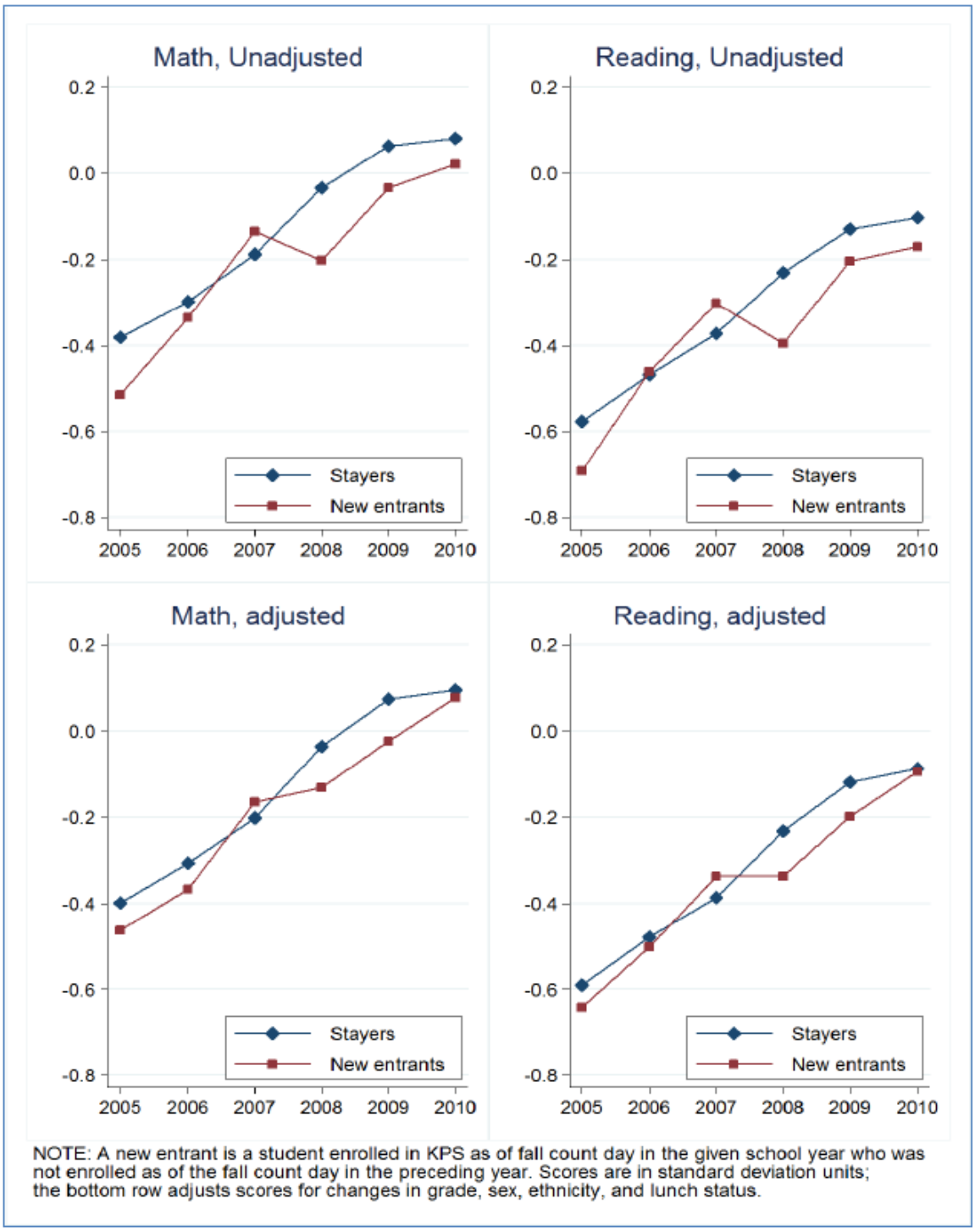


Figure 8 Standardized MEAP Scores of KPS Students, by Entry Status and Year

NOTE: The Michigan Educational Assessment Program (MEAP) is a standardized test given in grades 3–8 that was redesigned beginning in 2005, so there is a limited pre-Promise period for evaluating trends.

Appendix C

Other Results Estimated Using the Between-District MCER Analysis Sample

This appendix presents a more complete set of results for the between-district estimates of the effects of the Kalamazoo Promise. Appendix Table C1 presents pre- and post-Promise summary statistics for KPS, other districts in the Middle Cities Education Association (MCEA), and other Michigan districts statewide.

Appendix Table C2 present difference-in-differences estimates of Promise effects, comparing KPS to MCEA districts (first two panels), and KPS to all other Michigan districts (last two panels). The MCEA includes most predominantly urban districts in the state of Michigan, except Detroit Public Schools.

In Appendix Figures C1 through C6, we use the cross-district data to analyze Promise effects using the synthetic control method of Abadie, Diamond, and Hainmueller (2010). The synthetic control method is motivated by the observation that a weighted average of non-treated districts can be a better counterfactual of a treated district than any single district. In practice, the synthetic control method allows us to use data-driven methods to select a suitable weighted average of comparison districts. The specific protocol is described below.

Table C1

Descriptive Statistics for KPS, MCEA districts, and all other Michigan districts

	KPS			MCEA districts other than KPS			All other districts		
	Post-period	Pre-period	Overall	Post-period	Pre-period	Overall	Post-period	Pre-period	Overall
Enrollment in 4 year within 6 months	45.7%	35.9%	43.0%	26.4%	22.8%	25.4%	38.6%	31.8%	36.8%
Enrollment in public 4 year within 6 months	41.6%	26.2%	37.4%	18.5%	17.1%	18.1%	27.9%	24.3%	27.0%
Enrollment in flagship within 6 months	12.7%	6.4%	11.0%	4.0%	4.7%	4.2%	8.0%	8.0%	8.0%
Enrollment in other 4 year within 6 months	4.2%	9.8%	5.7%	7.9%	5.6%	7.3%	10.7%	7.5%	9.9%
Degree completion within 6 years	37.1%	35.1%	36.1%	25.5%	26.9%	26.1%	36.4%	36.3%	36.3%
Bachelor's completion within 6 years	31.6%	30.2%	30.9%	19.3%	20.0%	19.6%	29.8%	29.1%	29.5%
Student teacher ratio	18.4	16.9	18.0	18.9	28.6	21.5	19.8	24.4	21.0
Percent FRL	56.4%	47.4%	53.9%	52.1%	38.4%	48.3%	32.6%	23.2%	30.2%
Percent Black	46.3%	42.8%	45.3%	39.5%	34.3%	38.1%	15.4%	13.5%	14.9%
Percent White	40.1%	47.3%	42.1%	51.4%	58.0%	53.2%	76.5%	80.2%	77.4%
Percent Hispanic	7.7%	6.5%	7.4%	5.7%	4.9%	5.5%	3.8%	2.8%	3.5%
Percent other non-White	5.9%	3.4%	5.2%	2.9%	2.6%	2.8%	4.0%	3.3%	3.8%

SOURCE: Authors' calculations using the Michigan Consortium for Educational Research (MCER) data of district by year averages.

Table C2

Promise Effects on Enrollment and Completion using Between-District Analysis (MCEA and all districts, with and without linear time trends)

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
	Enrollment within 6 months at:				Credential at 6 years:	
	4-yr school	4-yr.Promise school	4-yr. non-Promise school	Flagship school	Any credential	BA/BS
MCEA: with district time trends						
After × KPS	0.071**	0.110**	−0.039*	0.085**	0.061	0.039
Robust standard error	[0.024]	[0.019]	[0.013]	[0.026]	[0.044]	[0.040]
Permutation *p*-value	0.032	0.032	0.065	0.032	0.258	0.258
Mean DV	0.259	0.181	0.0781	0.0414	0.238	0.179
MCEA: without district time trends						
After × KPS	0.059**	0.135**	−0.076**	0.072**	0.030	0.020
Robust standard error	[0.019]	[0.012]	[0.011]	[0.010]	[0.018]	[0.015]
Permutation *p*-value	0.032	0.032	0.032	0.032	0.161	0.194
All districts: with district time trends						
After × KPS	0.041	0.082**	−0.041*	0.080*	0.038	0.020
Robust standard error	[0.024]	[0.017]	[0.012]	[0.025]	[0.048]	[0.037]
Permutation *p*-value	0.116	0.031	0.055	0.055	0.308	0.382
Mean DV	0.328	0.236	0.092	0.054	0.331	0.257
All districts: without district time trends						
After × KPS	0.033	0.120**	−0.088**	0.066**	0.024	0.011
Robust standard error	[0.018]	[0.012]	[0.011]	[0.010]	[0.017]	[0.011]
Permutation *p*-value	0.153	0.025	0.027	0.025	0.210	0.288

NOTE: Standard errors robust to heteroskedasticity are in parentheses. ***, **, and * indicate *p* less than 0.01, 0.05, or 0.10. p-value is obtained using a placebo-regression permutation inference described in the text. Regressions include district-by-year proportions of students to teachers, students eligible for subsidized lunch, white students, nonwhite students, and Hispanic students. For observations missing a covariate, we include a dummy for missing and assign the sample mean. The regressions control for district fixed effects and year-of-graduation time effects. Observations are weighted by the number of graduates in each district-year. The mean of the dependent variable is for the control districts in the pre-Promise period. The control districts consist either of the Michigan Middle Cities Education Association (MCEA) districts (top two panels) or of all districts in Michigan (bottom two panels).

Synthetic Control Protocol

We begin with the potential synthetic control donor pool of 511 districts. We keep only those with a full balanced panel across years, which reduces the set to 315 districts. Taking averages across time, we drop districts whose values for the outcomes and student-teacher ratio,

percent free or reduced- price lunch (FRL), and percent white differ by more than 2.43 standard deviations of the statewide distribution from KPS's values, leaving a donor pool of 100 districts. Most of the districts trimmed from the donor pool have either high concentrations of whites or very low concentrations of FRL students; however, a few very highly nonwhite and high FRL districts are also trimmed. Districts whose share of FRL students were within [0.039, 0.909] and whose white student share were within [0.021, 0.924] are kept; these two variables drive much of the trimming.

We use the "synth" command in Stata, with KPS as the treated unit, selecting the 2003 and 2005 values of the outcome variable and the average values over 2003–2005 of the student-teacher ratio, percent FRL, and percent white as the matching variables.

For inference, we repeat this procedure, assigning each of the other donor pool districts to be the treated unit. We collect both the treated unit's treatment effect and the synthetic control's treatment effect for each run of "synth" and calculate their difference for each year, along with the root mean squared predicted errors (RMSPE).

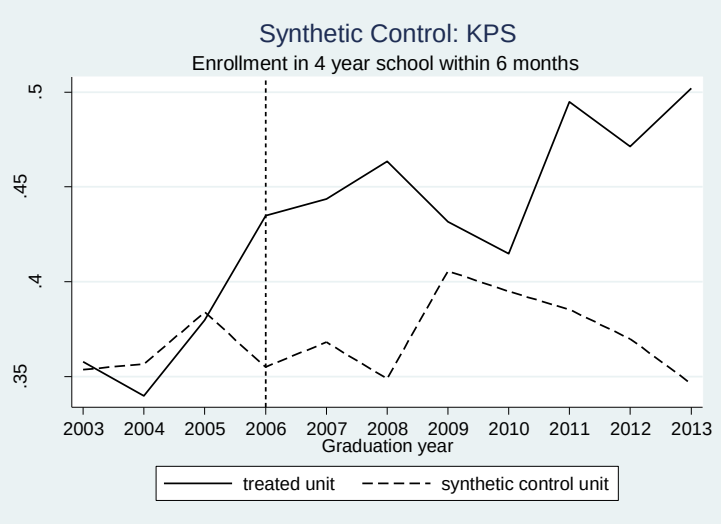
Finally, we plot the net effect of the Promise across time for all the districts whose RMSPE is less than a specified cutoff in terms of multiples of KPS's RMSPE. Our preferred cutoff is 1.25 x KPS's RMSPE. Below, we present result figures from this analysis.

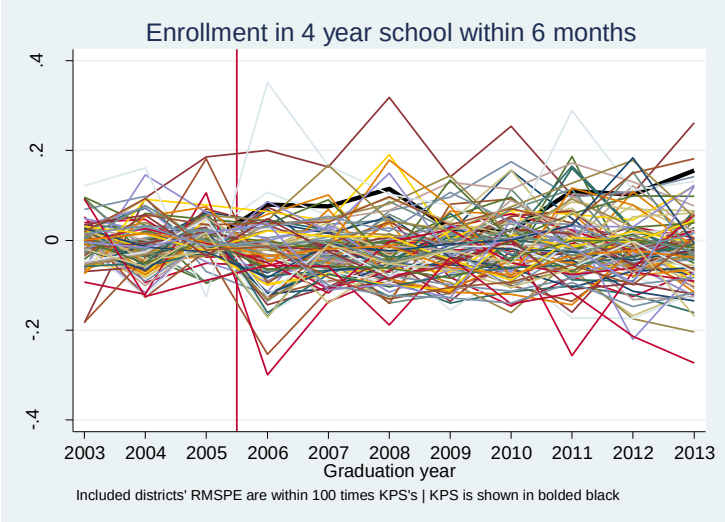
The results are roughly consistent with the between-district regression analysis. For college enrollment outcomes, synthetic controls closely match KPS before the Promise, and Promise effects are unusually high relative to those of placebo districts. For degree completion outcomes, synthetic controls match KPS less closely before the Promise, and effects, while positive, are noisier, and inference is less conclusive.

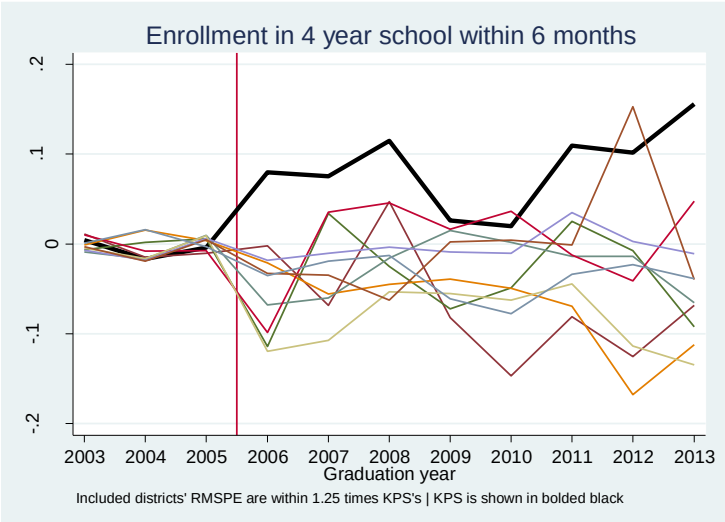
References

Abadie, Alberto, Alexis Diamond, and Jens Hainmueller (2010). "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program." *Journal of the American Statistical Association* 105(490): 493–505.

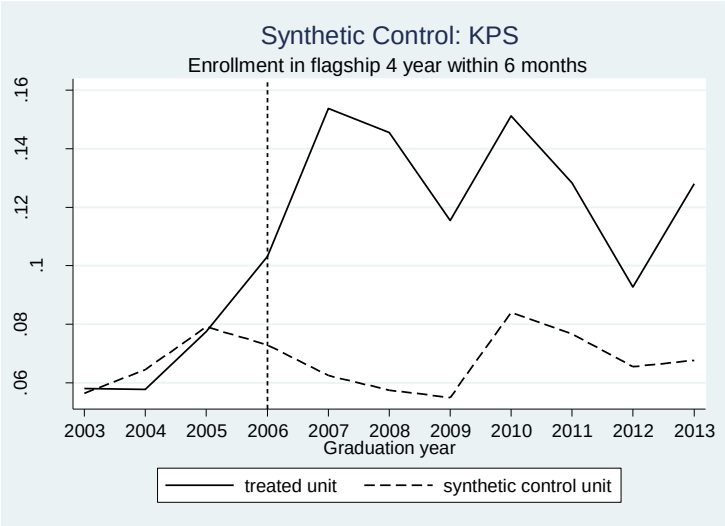
Appendix Figure C1: Enrollment in 4-year college within six months of HS graduation

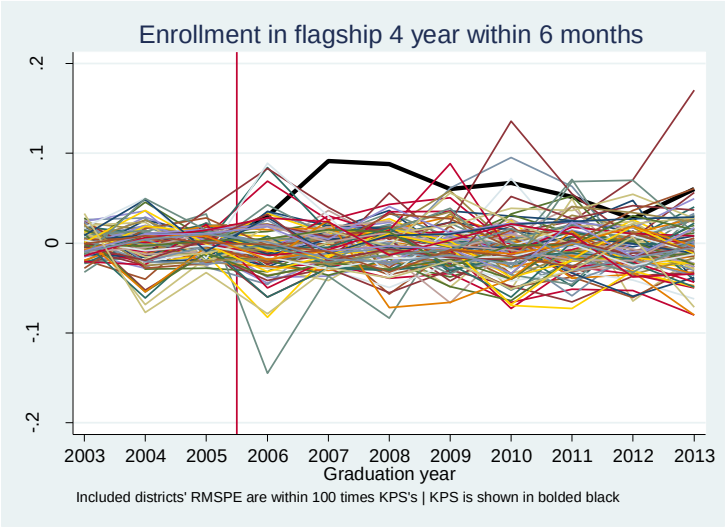


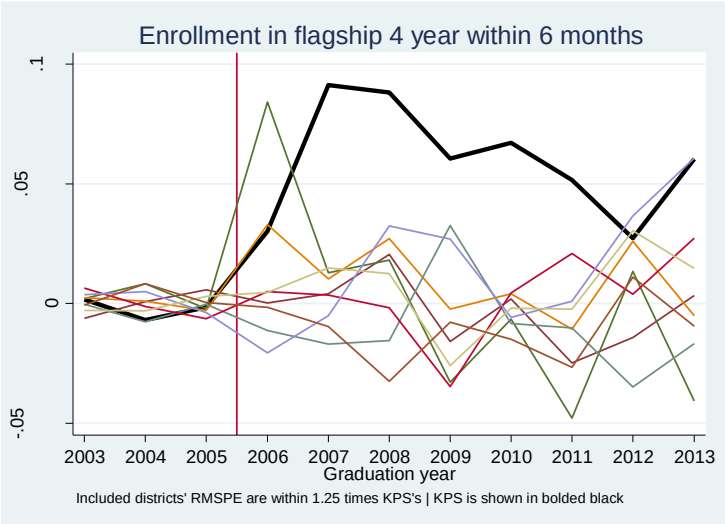




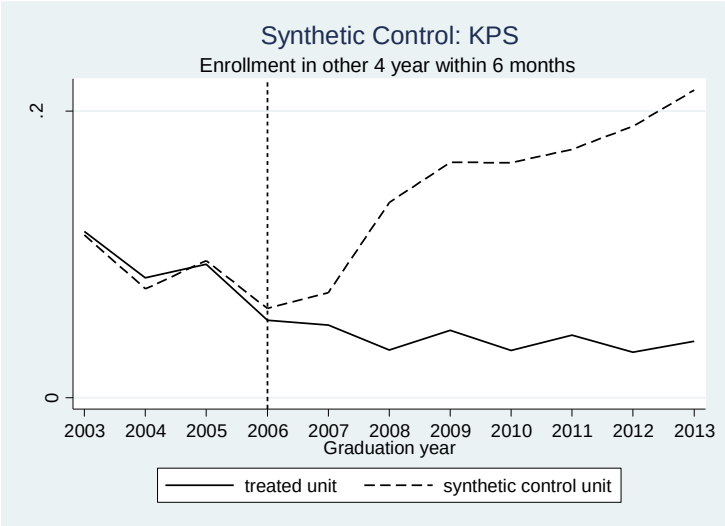
Appendix Figure C2: Enrollment in MSU or UM-AA within six months of HS graduation

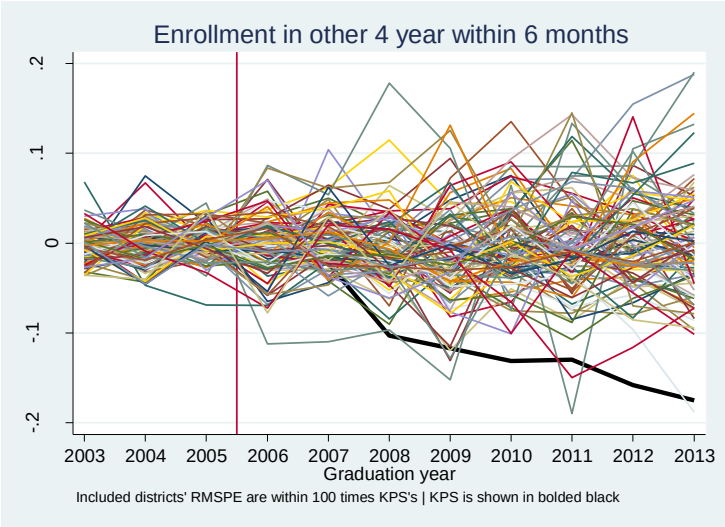


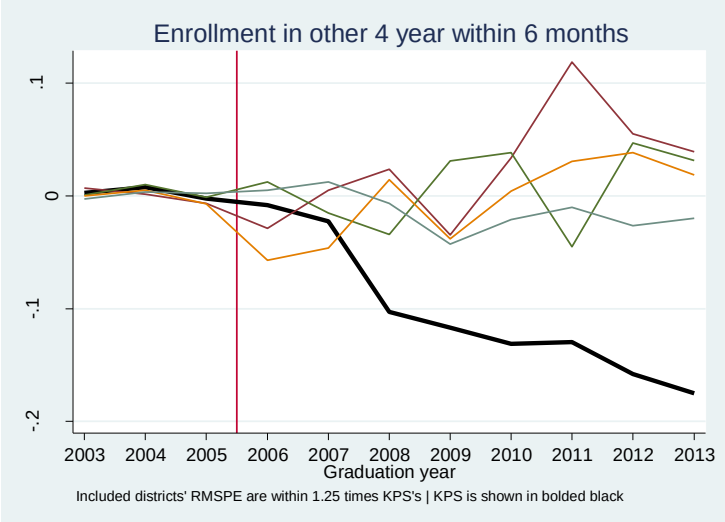




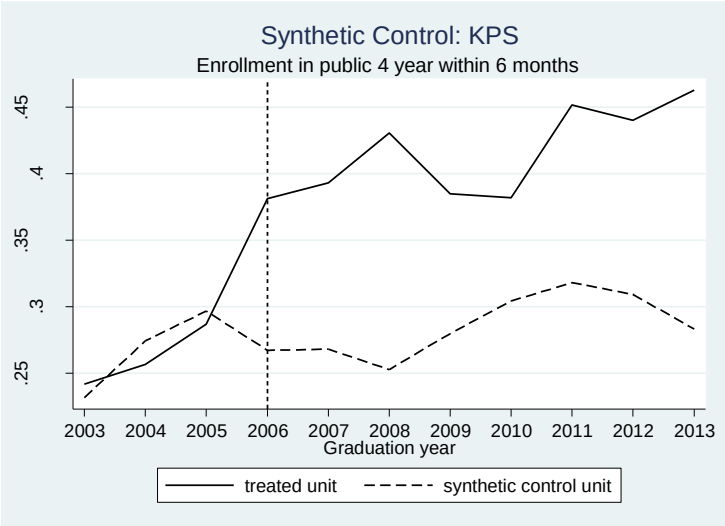
Appendix Figure C3: Enrollment in non-Promise 4-year within 6 months of HS graduation

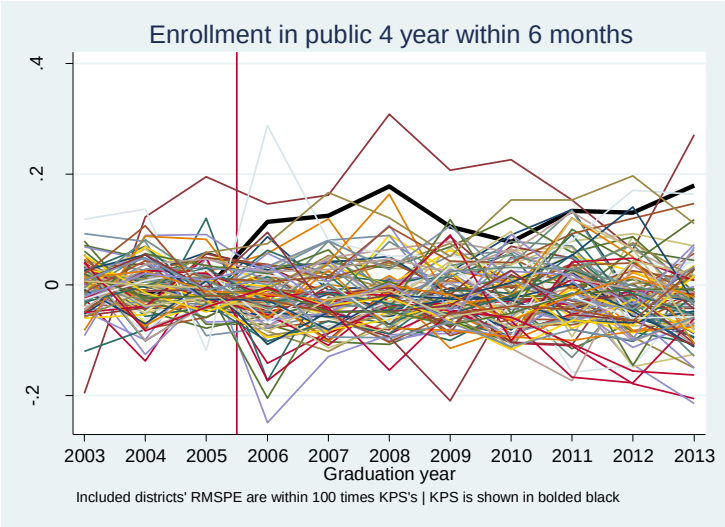


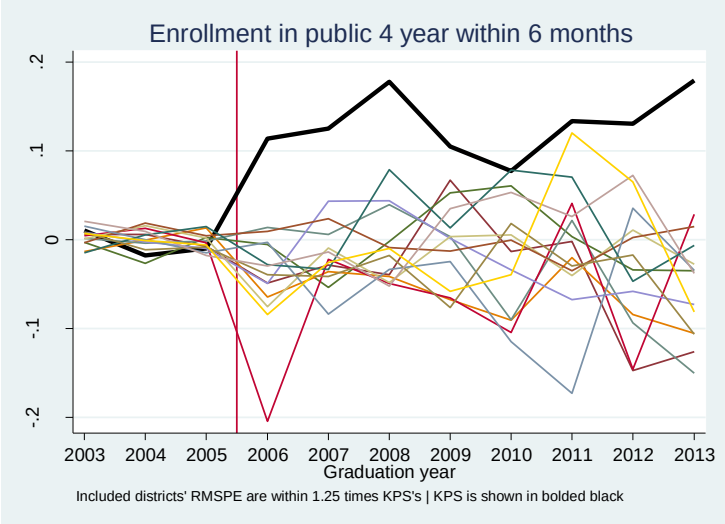




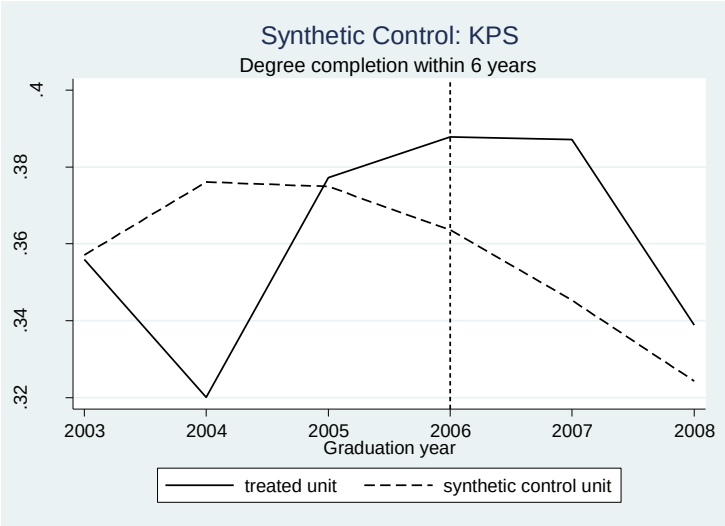
Appendix Figure C4: Enrollment in Promise 4-year within 6 months of HS graduation

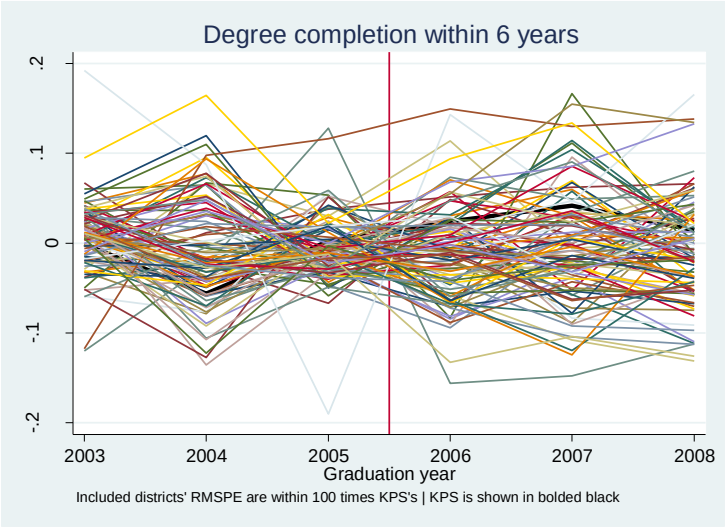


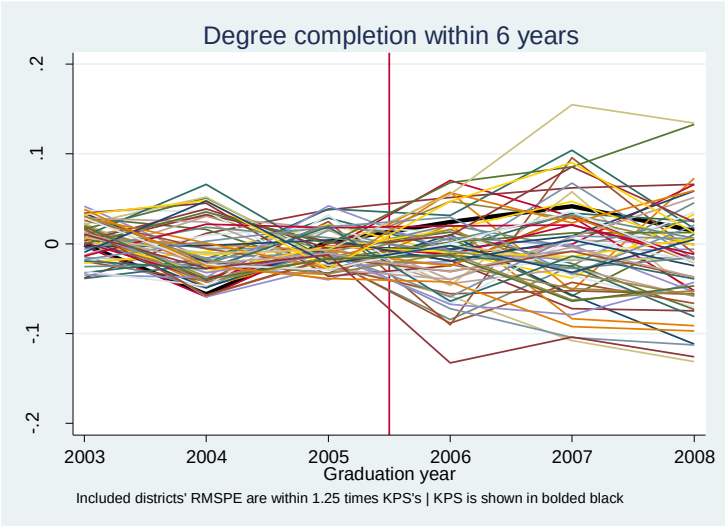




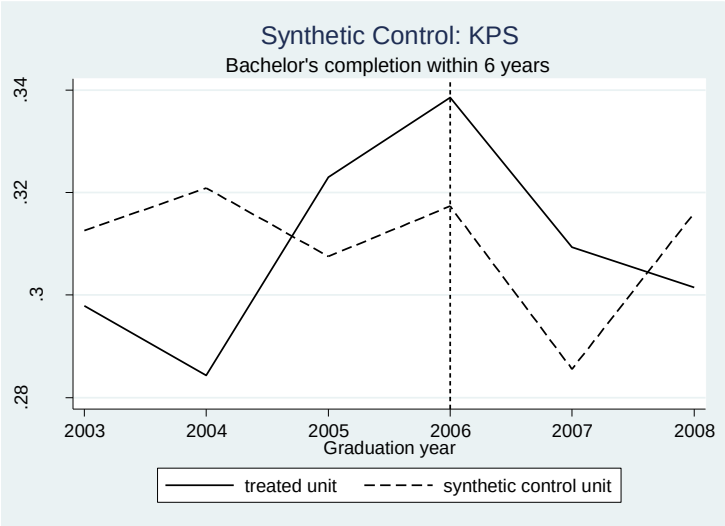
Appendix Figure C5: Any degree completion within six years of HS graduation

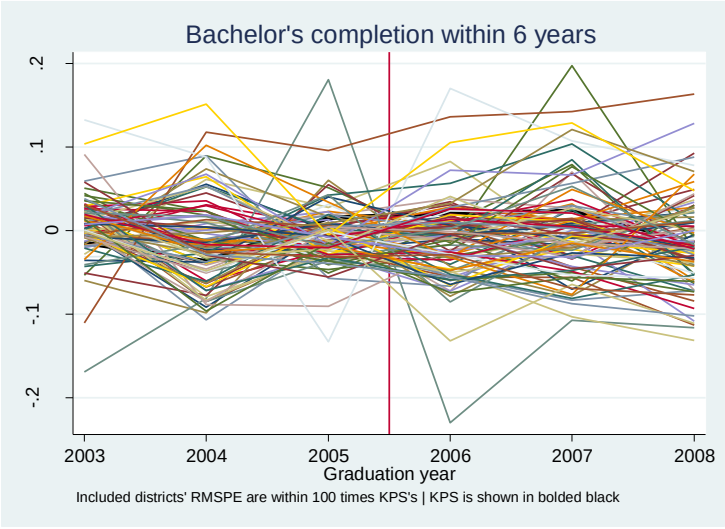


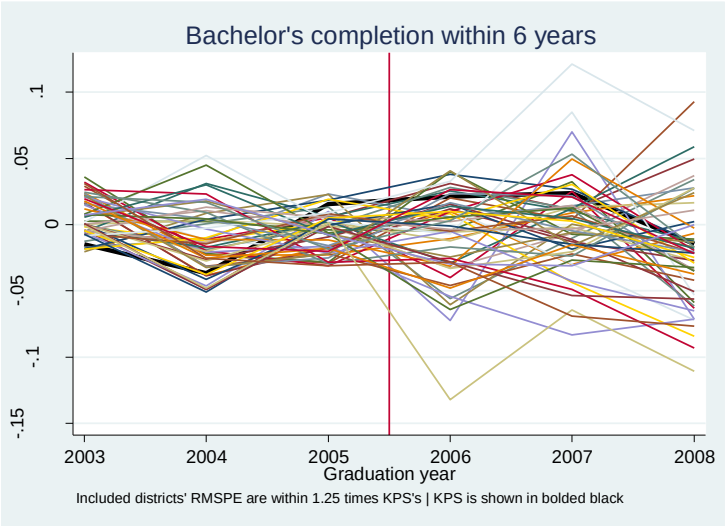




Appendix Figure C6: Bachelor's completion within six years of HS graduation





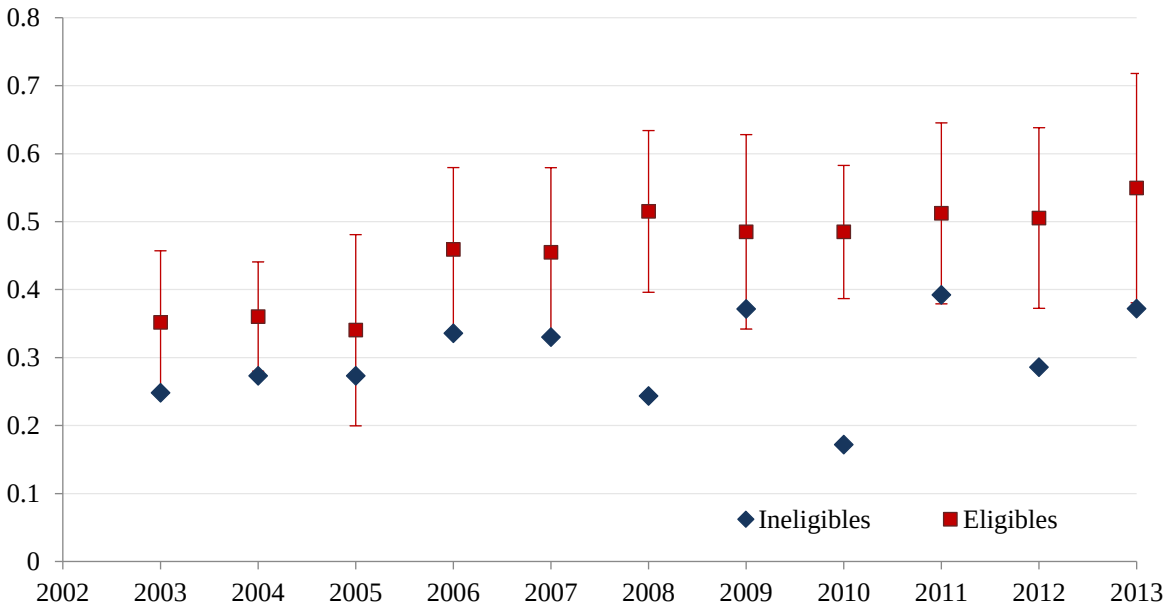


Appendix D

Other Results

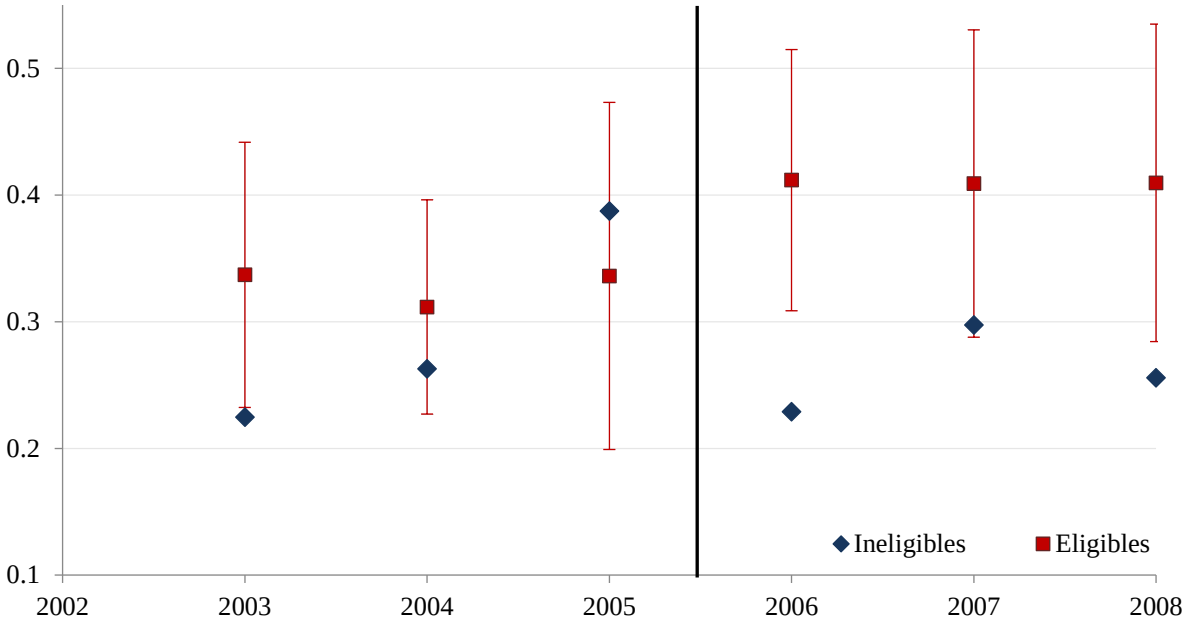
This appendix presents further results that include figures presenting the OLS-estimated counterparts to the IV-estimates presented in Figures 2–3 and the OLS-estimated counterparts of the heterogeneity results presented in Table 7.

Figure D1 Fitted Probabilities of 4-Year College Attendance Within Six Months (OLS)



NOTE: The plotted values represent fitted probabilities of attending a four-year college within six months of high school graduation, by class year and Promise eligibility, allowing Promise effects to vary by year. The vertical black line indicates when the Promise began. Prior to 2006, eligibility is based on Promise rules has the Promise been in effect at the time (rules-based eligibility). After 2006, eligibility is taken from administrative records from the Kalamazoo Promise (observed eligibility). Point-wise 95-percent confidence intervals are shown for the difference between eligible and ineligibles.

Figure D2 Fitted Probabilities of Any Credential Attainment Within Six Years (OLS)



NOTE: The plotted values represent fitted probabilities of attaining any credential within six years of high school graduation, by class year and Promise eligibility, allowing Promise effects to vary by year. The vertical black line indicates when the Promise began. See notes to Figure D1. Point-wise 95-percent confidence intervals are shown for the difference between eligible and ineligibles.

Table D1

Promise OLS Effects by Group

	6-month attendance at 4-year		6-year BA/BS attainment		6-year credential attainment	
Income groups	Non-low income	Low-income	Non-low income	Low-income	Non-low income	Low-income
After × Elig	0.145**	0.093**	0.115	0.051	0.147*	0.083
	[0.066]	[0.047]	[0.077]	[0.041]	[0.078]	[0.056]
N	2,666	2,744	1,641	1,259	1,641	1,259
p-val of group diff		0.524		0.466		0.498
Mean DV	0.509	0.196	0.399	0.108	0.450	0.187
Race	White	Non-white	White	Non-white	White	Non-white
After × Elig	0.109	0.088*	0.030	0.074	0.004	0.144***
	[0.067]	[0.046]	[0.069]	[0.047]	[0.079]	[0.055]
N	2,624	2,791	1,545	1,360	1,545	1,360
p-val of group diff		0.791		0.599		0.142
Mean DV	0.506	0.257	0.398	0.161	0.449	0.235
Gender	Male	Female	Male	Female	Male	Female
After × Elig	0.080	0.116**	0.018	0.133**	0.007	0.195***
	[0.057]	[0.052]	[0.054]	[0.058]	[0.060]	[0.068]
N	2,551	2,864	1,388	1,517	1,388	1,517
p-val of group diff		0.639		0.144		0.0353
Mean DV	0.400	0.405	0.295	0.304	0.364	0.357

NOTE: Standard errors robust to heteroskedasticity are in brackets. *** , **, and * indicates *p* less than 0.01, 0.05, or 0.10. Timing is since high school graduation. All regressions include dummies for after the Promise's introduction, individual (pseudo-) eligibility, and graduation year. Other controls are sex, race/ethnicity, free/reduced-price lunch status, and high school of graduation-by-graduation year (except when subgroup is restricted on one of these dimensions). Prior to 2006, eligibility is based on Promise rules has the Promise been in effect at the time (rules-based eligibility). After 2006, eligibility is taken from administrative records from the Kalamazoo Promise (observed eligibility). The income groupings pertain to whether the student is eligible for free/reduced price lunch or not. The race groups are white non-Hispanic versus other groups. The mean of the dependent variable for each group is calculated over the eligible population in the pre-Promise period.

Appendix E

Promise Analysis Restricted to Seventh–Ninth Grade Entrant Eligibles

In this appendix, we present IV estimates in which we restrict the sample of eligible students to those entering KPS in seventh through ninth grade (rather than all students who entered before tenth grade). As the ineligible group consists of students who first entered in tenth grade or later, by making the eligibles a group of earlier movers (rather than long-term KPS students), the intent of this restriction is to make the eligible group more comparable to the ineligible group. However, in practice, this restriction makes the eligible and ineligible groups less comparable. Students who enter KPS at ninth grade come disproportionately from private schools, since there are few private high schools in the Kalamazoo area. As a result, the seventh to ninth grade entrants are more advantaged than both students who have been in KPS for a longer time and those who entered after ninth grade.

Table E1, which is the analogue to Table 2 in the main text, demonstrates this. For example, note the much higher fraction of Promise-eligible white students and the much lower fraction of Promise-eligible students eligible for subsidized lunch. This sample restriction implies that the estimated average treatment effect of the Promise is on a more-advantaged population, one that is less marginal on many college success measures and one that is not representative of the actual treated population. Additionally, the restriction diminishes the sample size of the eligible group dramatically, hurting precision. We thus believe that estimates based on this sample are less compelling in calculating an average treatment effect.

It is therefore not surprising that in subsequent Tables E2–E6 almost all Promise effects are severely attenuated, except for substitution among schools (see Table E3). These point

estimates are effectively estimating a different parameter than in our main estimates, and it is questionable whether this parameter is the policy-relevant one.

Table E1

Descriptive Statistics of Sample Restricted to 7th-9th Grade Entrant Eligibles

		Before		*After*		*DD*	*DD*
Variable	All	Eligibles	Ineligibles	Eligibles	Ineligibles		(standard error)
Demographics							
Male	0.448	0.377	0.442	0.497	0.432	0.1304	(0.060)
Black	0.412	0.188	0.481	0.249	0.581	-0.0394	(0.054)
Asian	0.049	0.052	0.056	0.067	0.031	0.0393	(0.027)
Hispanic	0.083	0.071	0.086	0.087	0.083	0.0182	(0.033)
White	0.447	0.688	0.369	0.588	0.295	-0.0264	(0.058)
Subsidized lunch	0.537	0.266	0.528	0.425	0.710	-0.0233	(0.057)
High school 1	0.475	0.396	0.399	0.501	0.507	-0.0032	(0.060)
High school 2	0.409	0.591	0.373	0.465	0.325	-0.0768	(0.060)
N	1,378	154	233	449	542		

NOTE: Numbers represent authors' calculations of demographic characteristics of KPS graduates for the classes of 2003 through 2013 (excluding alternative education programs). Eligibility is calculated according to the Kalamazoo Promise rules. "Before" represents the cohorts 2003 through 2005; "After" represents cohorts 2006 through 2013. "DD" represents the difference between eligibles after and before the Promise and ineligibles after and before the Promise. Standard errors robust to heteroskedasticity are in parentheses.
SOURCE: Authors' calculations from KPS and Kalamazoo Promise administrative data.

Table E2

Promise Effects on Enrollment using Sample Restricted to 7th-9th Grade Entrant Eligibles

Method	(1) IV
Panel A: Enrollment within 6 months	
(Mean of DV | after=0, elig.=1) = 0.688	
After × Eligible	-0.062
	[0.080]
R^2	0.182
Panel B: Enrollment within 12 months	
(Mean of DV | after=0, elig.=1) = 0.747	
After × Eligible	-0.095
	[0.077]
R^2	0.203
Panel C: Enrollment at 4-yr. within 6 months	
(Mean of DV | after=0, elig.=1) = 0.519	
After × Eligible	0.000
	[0.079]
R^2	0.207
Panel D: Enrollment at 4-yr. within 12 months	
(Mean of DV | after=0, elig.=1) = 0.532	
After × Eligible	-0.003
	[0.079]
R^2	0.210

NOTE: Standard errors robust to heteroskedasticity are in brackets. ***, **, and * indicate *p* less than 0.01, 0.05, or 0.10. Outcome timing is since high school graduation. Regressions include dummies for after the Promise, individual (pseudo-)eligibility, sex, race/ethnicity, free/reduced-price lunch status, and high school of graduation-by-graduation year. In column (1), prior to 2006, eligibility is based on Promise rules has the Promise been in effect at the time (rules-based eligibility). After 2006, eligibility is taken from administrative records from the Kalamazoo Promise (observed eligibility). Column (2) always uses rules-based eligibility. Column (3) is the same as column (2) with the coefficient of interest rescaled by the first-stage coefficient. This first-stage coefficient is obtained by, in the post-Promise period, regressing observed eligibility on rules-based eligibility (and the same covariates as above) and is equal to 0.738. The *F*-test statistic from an *F*-test of weak identification is equal to 1,134. The mean of the dependent variable is for eligible population in the pre-Promise period. Sample size is 1,378.

Table E3

Promise IV Effects on Enrollment by Type of School using Sample Restricted to 7th-9th Grade Entrant Eligibles

Method	(1) IV
Panel A: Enroll at a Promise school within 6 months	
(Mean of DV | after=0, elig.=1) = 0.481	
After × Eligible	0.107
	[0.085]
R^2	0.132
Panel B: Enroll at a 4-yr. Promise school within 6 months	
(Mean of DV | after=0, elig.=1) = 0.312	
After × Eligible	0.167**
	[0.075]
R^2	0.153
Panel C: Enroll at a 4-yr. non-Promise school within 6 months	
(Mean of DV | after=0, elig.=1) = 0.208	
After × Eligible	-0.169***
	[0.055]
R^2	0.069

NOTE: Standard errors robust to heteroskedasticity are in brackets. ***, **, and * indicate *p* less than 0.01, 0.05, or 0.10. Outcome timing is since high school graduation. Regressions include dummies for after the Promise, individual (pseudo-)eligibility, sex, race/ethnicity, free/reduced-price lunch status, and high school of graduation-by-graduation year. In column (1), prior to 2006, eligibility is based on Promise rules has the Promise been in effect at the time (rules-based eligibility). After 2006, eligibility is taken from administrative records from the Kalamazoo Promise (observed eligibility). Column (2) always uses rules-based eligibility. Column (3) is the same as column (2) with the coefficient of interest rescaled by the first-stage coefficient. This first-stage coefficient is obtained by, in the post-Promise period, regressing observed eligibility on rules-based eligibility (and the same covariates as above) and is equal to 0.738. The *F*-test statistic from an *F*-test of weak identification is equal to 1,134. The mean of the dependent variable is for eligible population in the pre-Promise period. Sample size is 1,378.

Table E4

Promise IV Effects on College First Attended using Sample Restricted to 7th-9th Grade Entrant Eligibles

Panel A: Enroll at a given school within 6 months						
	KVCC	WMU	MSU	UM	Flagships	K
After × Eligible (IV)	-0.036	0.071	0.052	-0.019	0.033	-0.037
	[0.070]	[0.062]	[0.037]	[0.035]	[0.049]	[0.030]
Mean of DV	0.149	0.149	0.0519	0.0714	0.123	0.0649
Panel B: Enroll at a given school within 12 months						
	KVCC	WMU	MSU	UM	Flagships	K
After × Eligible (IV)	-0.076	0.076	0.055	-0.019	0.036	-0.039
	[0.075]	[0.063]	[0.037]	[0.035]	[0.050]	[0.030]
Mean of DV	0.195	0.156	0.0519	0.0714	0.123	0.0649

NOTE: Standard errors robust to heteroskedasticity are in brackets. ***, **, and * indicate *p* less than 0.01, 0.05, or 0.10. See note to Table E3. KVCC stands for Kalamazoo Valley Community College, WMU stands for Western Michigan University, MSU stands for Michigan State University, UM stands for University of Michigan-Ann Arbor, Flagships stands for either MSU or UM, and K stands for Kalamazoo College.

Table E5

Promise IV Effects on Credits Attempted using Sample Restricted to Seventh to Ninth Grade Entrant Eligibles

Method	(1) IV
Panel A: Credits attempted at 2 years	
(Mean of DV | after=0, elig.=1) = 29.41	
After × Eligible	-2.718
	[3.370]
R^2	0.230
N	1,273
Panel B: Credits attempted at 3 years	
(Mean of DV | after=0, elig.=1) = 42.97	
After × Eligible	-2.357
	[5.162]
R^2	0.257
N	1,134
Panel C: Credits attempted at 4 years	
(Mean of DV | after=0, elig.=1) = 56.75	
After × Eligible	-4.768
	[7.082]
R^2	0.244
N	983

NOTE: Standard errors robust to heteroskedasticity are in brackets. ***, **, and * indicate *p* less than 0.01, 0.05, or 0.10. Outcome timing is since high school graduation. Regressions include dummies for after the Promise, individual (pseudo-)eligibility, sex, race/ethnicity, free/reduced-price lunch status, and high school of graduation-by-graduation year. The mean of the dependent variable is for the eligible population in the pre-Promise period. In column (1), prior to 2006, eligibility is based on Promise rules has the Promise been in effect at the time (rules-based eligibility). After 2006, eligibility is taken from administrative records from the Kalamazoo Promise (observed eligibility). Column (2) always uses rules-based eligibility. Column (3) is the same as column (2) with the coefficient of interest rescaled by the first-stage coefficient. This first-stage coefficient is obtained by, in the post-Promise period, regressing observed eligibility on rules-based eligibility (and the same covariates as above). The first-stage coefficient in panel A is equal to 0.738, 0.727 in panel B, and 0.742 in panel C. The *F*-test statistic from an *F*-test of weak identification is equal to 1031 in panel A, 800 in panel B, and 693 in panel C.

Table E6

Promise IV Effects on Degree Attainment using Sample Restricted to Seventh to Ninth Grade Entrant Eligibles

Method	(1) IV
Panel A: Any credential at 4 years	
(Mean of DV | after=0, elig.=1) = 0.260	
After × Eligible	-0.060
	[0.071]
R^2	0.129
Panel B: Any credential at 6 years	
(Mean of DV | after=0, elig.=1) = 0.448	
After × Eligible	0.088
	[0.094]
R^2	0.176
Panel C: BA/BS at 4 years	
(Mean of DV | after=0, elig.=1) = 0.247	
After × Eligible	-0.078
	[0.063]
R^2	0.185
Panel D: BA/BS at 6 years	
(Mean of DV | after=0, elig.= 1) = 0.422	
After × Eligible	0.019
	[0.086]
R^2	0.228

NOTE: Standard errors robust to heteroskedasticity are in brackets. ***, **, and * indicate *p* less than 0.01, 0.05, or 0.10. Outcome timing is since high school graduation. Regressions include dummies for after the Promise, individual (pseudo-)eligibility, sex, race/ethnicity, free/reduced-price lunch status, and high school of graduation-by-graduation year. The mean of the dependent variable is for the eligible population in the pre-Promise period. In column (1), prior to 2006, eligibility is based on Promise rules has the Promise been in effect at the time (rules-based eligibility). After 2006, eligibility is taken from administrative records from the Kalamazoo Promise (observed eligibility). Column (2) always uses rules-based eligibility. Column (3) is the same as column (2) with the coefficient of interest rescaled by the first-stage coefficient. This first-stage coefficient is obtained by, in the post-Promise period, regressing observed eligibility on rules-based eligibility (and the same covariates as above). The first-stage coefficient at four years is equal to 0.742 and 0.753 at six years. The *F*-test statistic from an *F*-test of weak identification at four years is equal to 693 and 435 at six years. Sample sizes are 983 at four years and 756 at six years.