

# The Kalamazoo Promise: Enrollment and Achievement Trends in Kalamazoo Public Schools

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**PromiseNet 2010 Conference**

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June 16-18, 2010

# Kalamazoo Promise: Basic Principles

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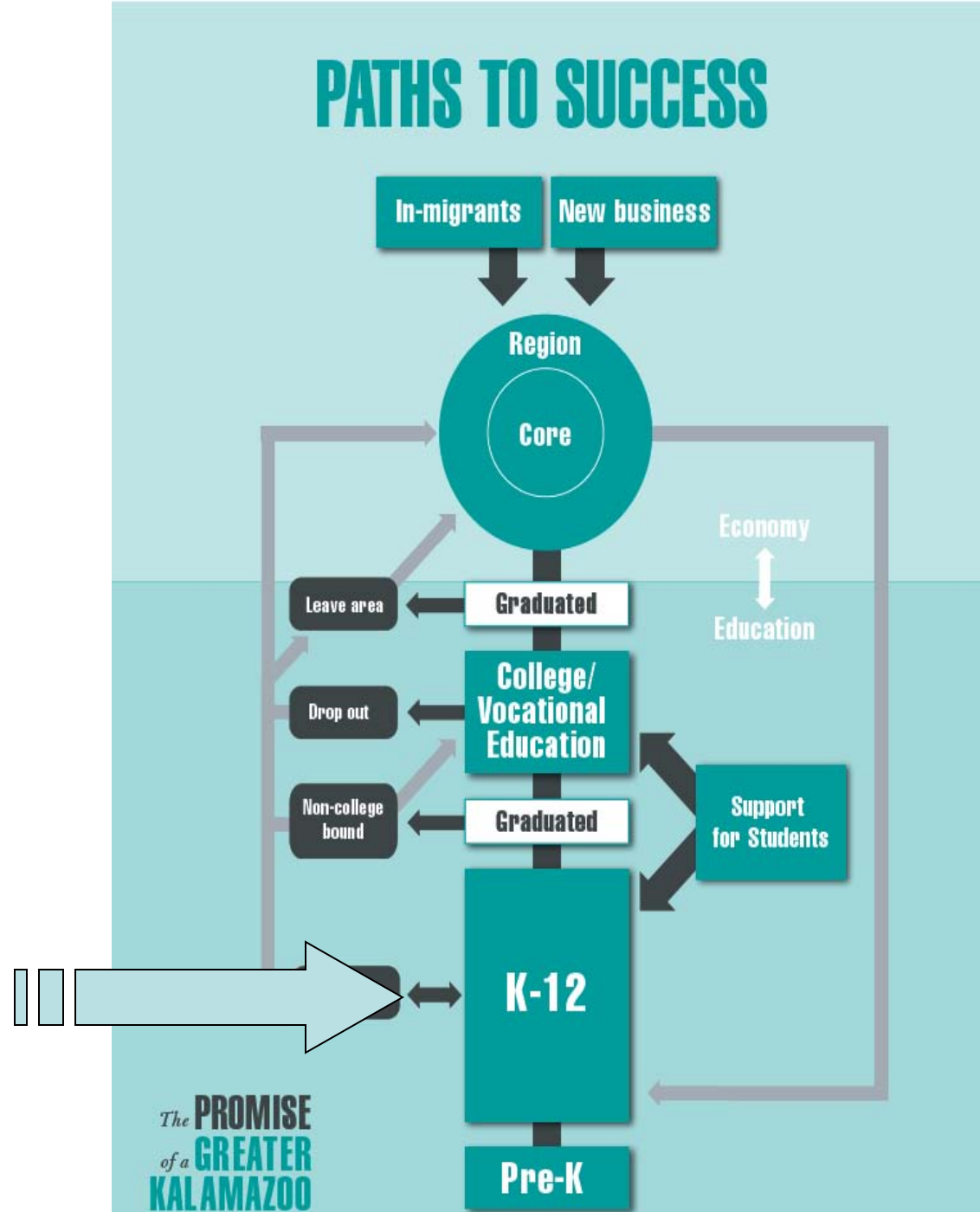
- **First and foremost**—A place-based economic development initiative centered on student scholarship
- *Place-based* – recipients must reside in the district and attend/graduate from Kalamazoo Public Schools (minimum of four years)
- *Universal* – every student who graduates & meets residency/attendance requirements is eligible
- *Generous* –covers 65% to 100% of tuition and fees for up to 4 years of college; indefinite duration (guaranteed at any point for at least the next 13 years)
- *Flexible* – may be used at any of 44 public colleges or universities in Michigan, including vocational education programs; may be used anytime within 10 years of graduation.

## Intended Effects

- Increase high school graduation rates
- Increase college application and admission rates
- Increase skilled workers in the region
- Attract additional families who value education
- Attract additional firms that value a skilled workforce

## Critical Steps

- Reduce exit rates and boost entry numbers
- Stabilize and balance ethnic composition
- Raise student achievement



# Trends

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## Trends in:

- Overall enrollment
- Relative enrollment by ethnic group
- KPS achievement

## Evidence strongly suggests that after the Promise:

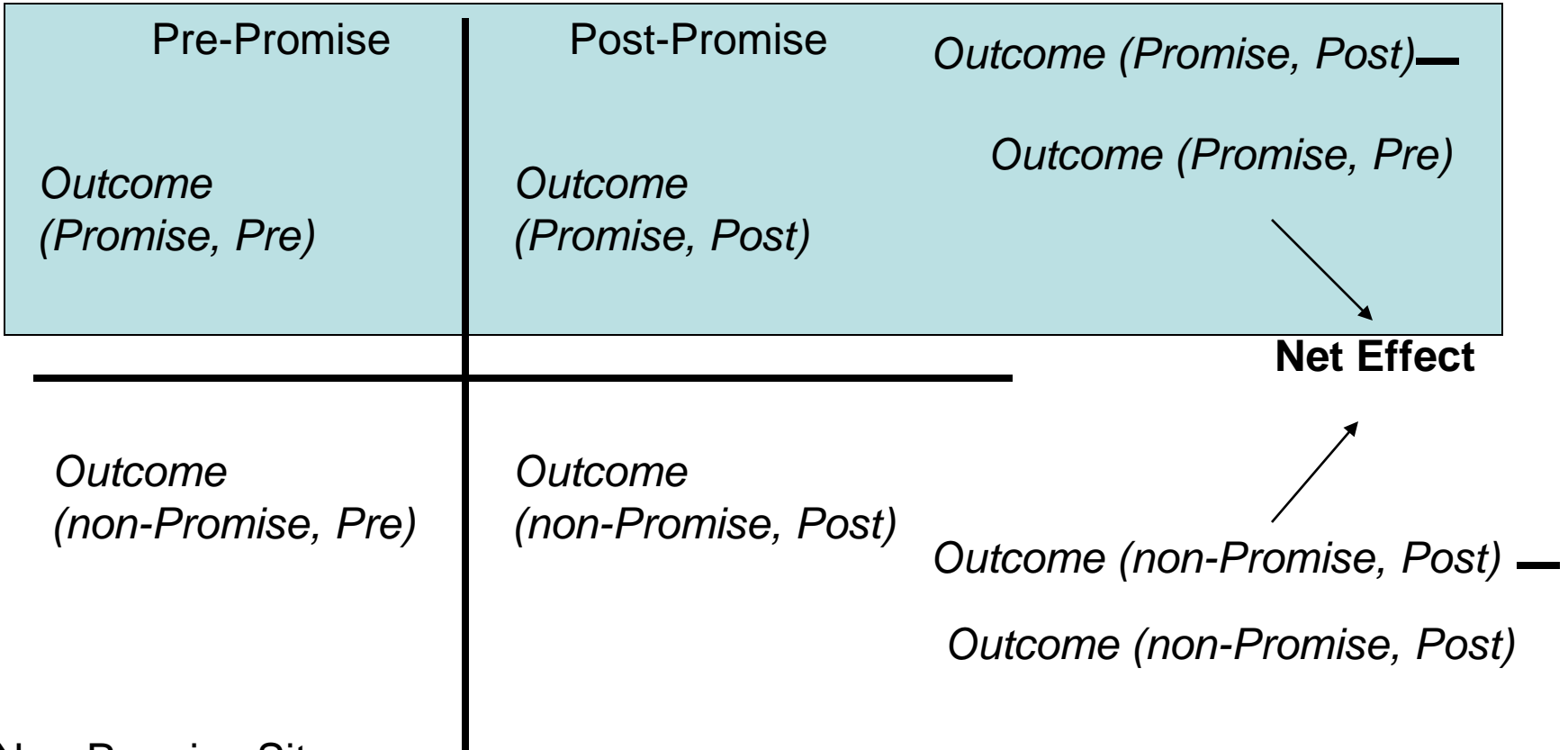
- Significant increase in enrollment due more to lower exit rates
- Stabilization of ethnic composition in KPS
- Considerable increase in student achievement

# Net Impact Analysis Framework

## *Difference-in-Differences*

Promise Sites

Promise Started (Nov 10, 2005)



What if participants are different between the two groups? Or circumstances are different?



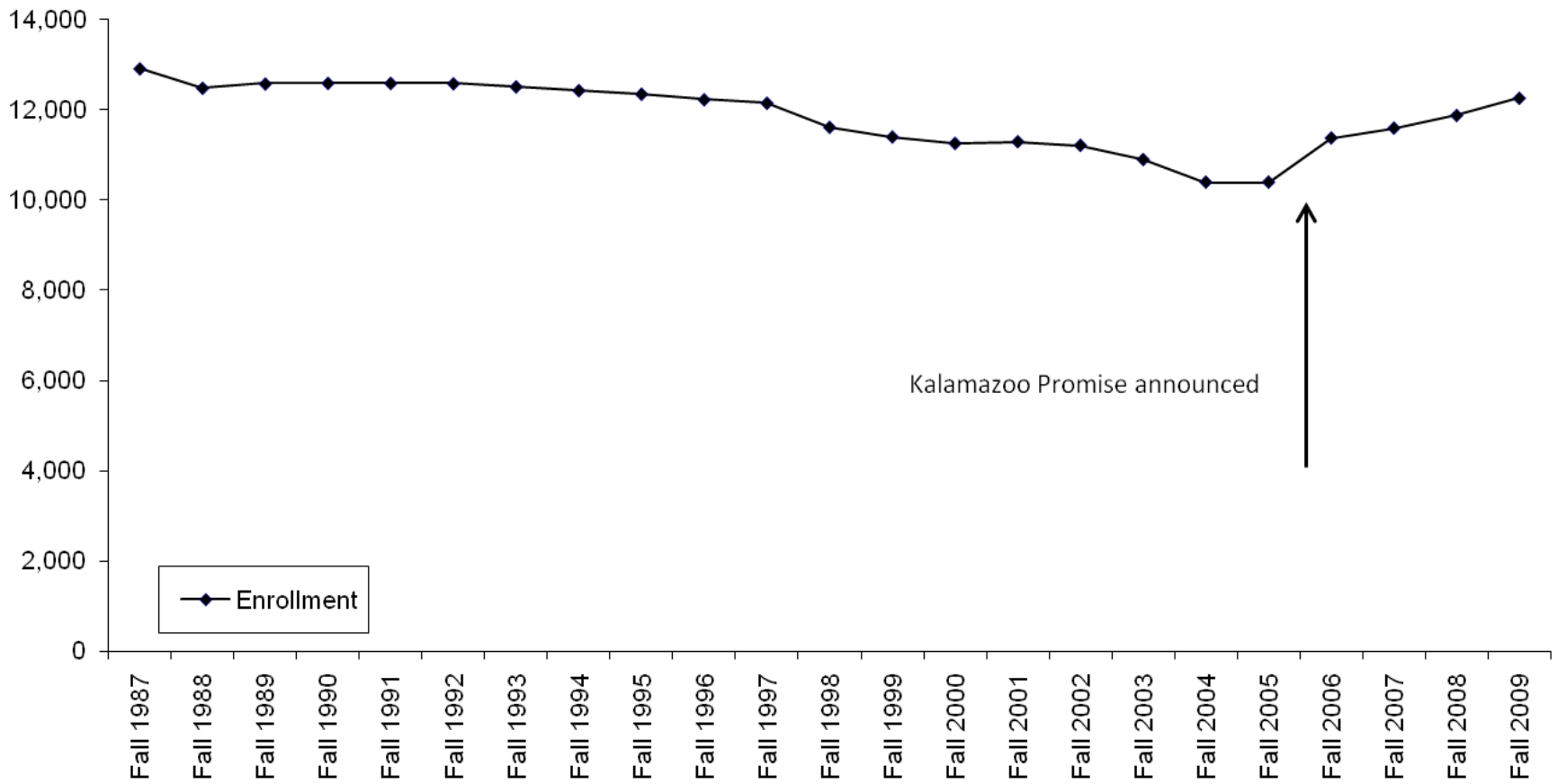
Difference-in-Differences Approach <sup>5</sup>

# Enrollment

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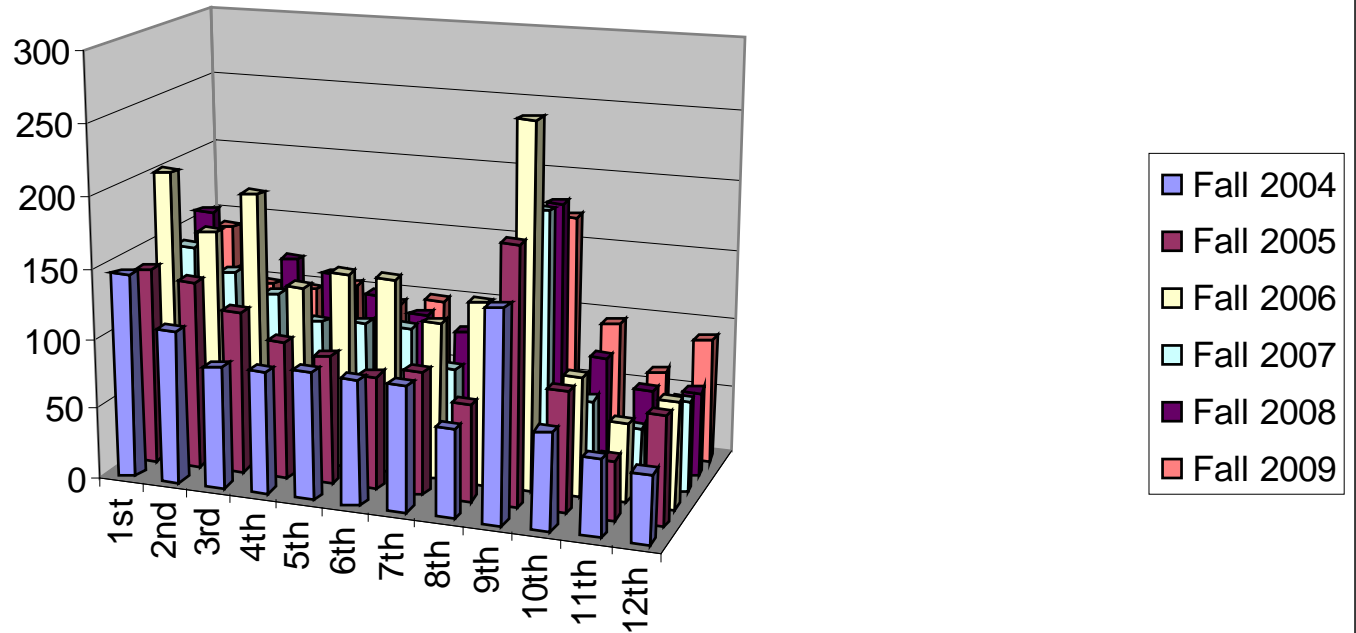
- Enrollment = entry – exit
- Entry = number entered by grade level
  - No apparent pool of potential entrants to use as denominator to construct rates
- Exit rate = students leaving KPS by the fall of a given year, as a percentage of students in a particular grade the previous fall
  - Exits reflect the average behavior of students in KPS who potentially could exit

**Figure 1. KPS Enrollment, by Year**



*Note:* Data come from KPS, and are based on state count. Numbers include special ed, alternative ed, and students at Kalamazoo Area Math and Science Center. These are total student counts, not full time equivalent counts. Numbers exclude out-of-district Education for Employment (vocational education) students, adult ed, PEEP (pre-school) and Head Start.

# KPS Enrollment by Grade Level and Year





## Percentage of students exiting by succeeding fall count day

	Kdg	1st	2nd	3rd	4th	5th	6th
Fall 2003	18.4%	14.5%	14.5%	19.3%	15.8%	15.7%	16.7%
Fall 2004	17.7%	17.6%	15.5%	15.9%	15.2%	16.4%	15.2%
Fall 2005	13.8%	12.9%	11.8%	10.8%	9.2%	9.5%	8.8%
Fall 2006	14.5%	13.4%	12.1%	12.8%	10.3%	11.5%	10.6%
Fall 2007	14.2%	11.5%	11.1%	10.2%	10.6%	10.2%	11.0%
Fall 2008	13.9%	11.7%	11.6%	10.2%	9.5%	9.7%	9.3%

## Percentage of students exiting by succeeding fall count day

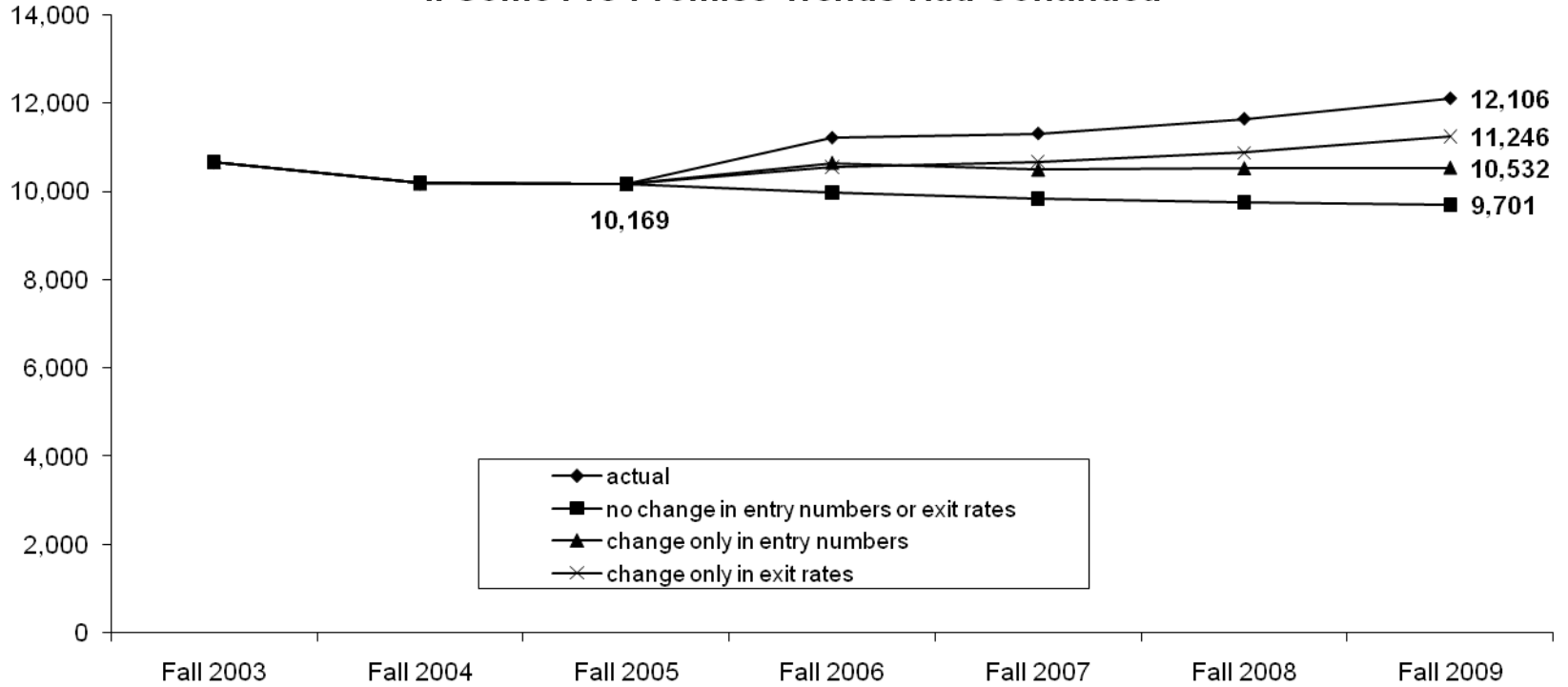
	7th	8th	9th	10th	11th	12th
Fall 2003	15.4%	17.8%	24.6%	24.9%	23.9%	94.4%
Fall 2004	16.8%	16.4%	23.0%	18.4%	17.9%	94.9%
Fall 2005	9.5%	9.8%	16.7%	13.0%	14.8%	93.7%
Fall 2006	10.3%	12.3%	22.7%	17.2%	18.8%	94.0%
Fall 2007	10.2%	12.1%	24.0%	17.8%	19.9%	92.7%
Fall 2008	8.1%	9.8%	19.0%	14.7%	17.0%	90.6%

**Table 1. Post-Promise Enrollment Trends, and Their Relationship to Changed Entry Numbers and Exit Rates**

	Actual enrollment	Increase compared to continuation of pre-Promise entry numbers and exit trends	Increase from pre-Promise trends if only entry numbers had changed	Increase from pre-Promise numbers if only exit rates had changed	% of Promise increase due to increased entry numbers	% of Promise increase due to decreased exit rates
Fall 2006	11,220	1,243	663	581	53.3%	46.7%
Fall 2007	11,315	1,473	648	833	44.0%	56.6%
Fall 2008	11,647	1,895	769	1,122	40.6%	59.2%
Fall 2009	12,106	2,405	831	1,546	34.6%	64.3%

**NOTE:** Actual enrollment numbers for KPS are calculated by authors as of fall count day, based on micro student records. Change in enrollment numbers in next column compares actual enrollment to enrollment if pre-Promise averages from 2003–2005 for both entry numbers and exit rates by grade had continued unchanged. Other columns consider only changing entry numbers but not exit rates, and exit rates but not entry numbers. The percentage due to entry numbers versus exit rates is calculated from preceding columns. The percentage due to entry numbers (exit rates) is the change due to only entry numbers (exit rates) changing, as a percentage of the total change in enrollment comparing actual enrollment with enrollment without any changes in entry numbers or exit rates. Note that these percentage changes do not exactly sum to 100 percent, as entry number changes and exit rate changes interact in determining enrollment.

**Figure 5. Actual KPS Enrollment Trends, 2003 to 2009,  
Compared to Simulations of Enrollment  
if Some Pre-Promise Trends Had Continued**



*Note:* Simulations rely on continuing average new student entry numbers and/or exit rates, by grade level, that occurred from fall of 2003 to fall of 2005, prior to the Promise. The lowest line shows trend if both entry numbers and exit rates for each and every grade level had stayed at their pre-Promise average. The other lines change just one of these factors. The top line shows actual enrollment. Calculations are based on micro student data on students present as of fall count day. KAMSC students from outside the district are excluded. All students are counted as one, without adjusting for FTE enrollment. Count numbers are therefore similar to but not identical to official state fall count data.

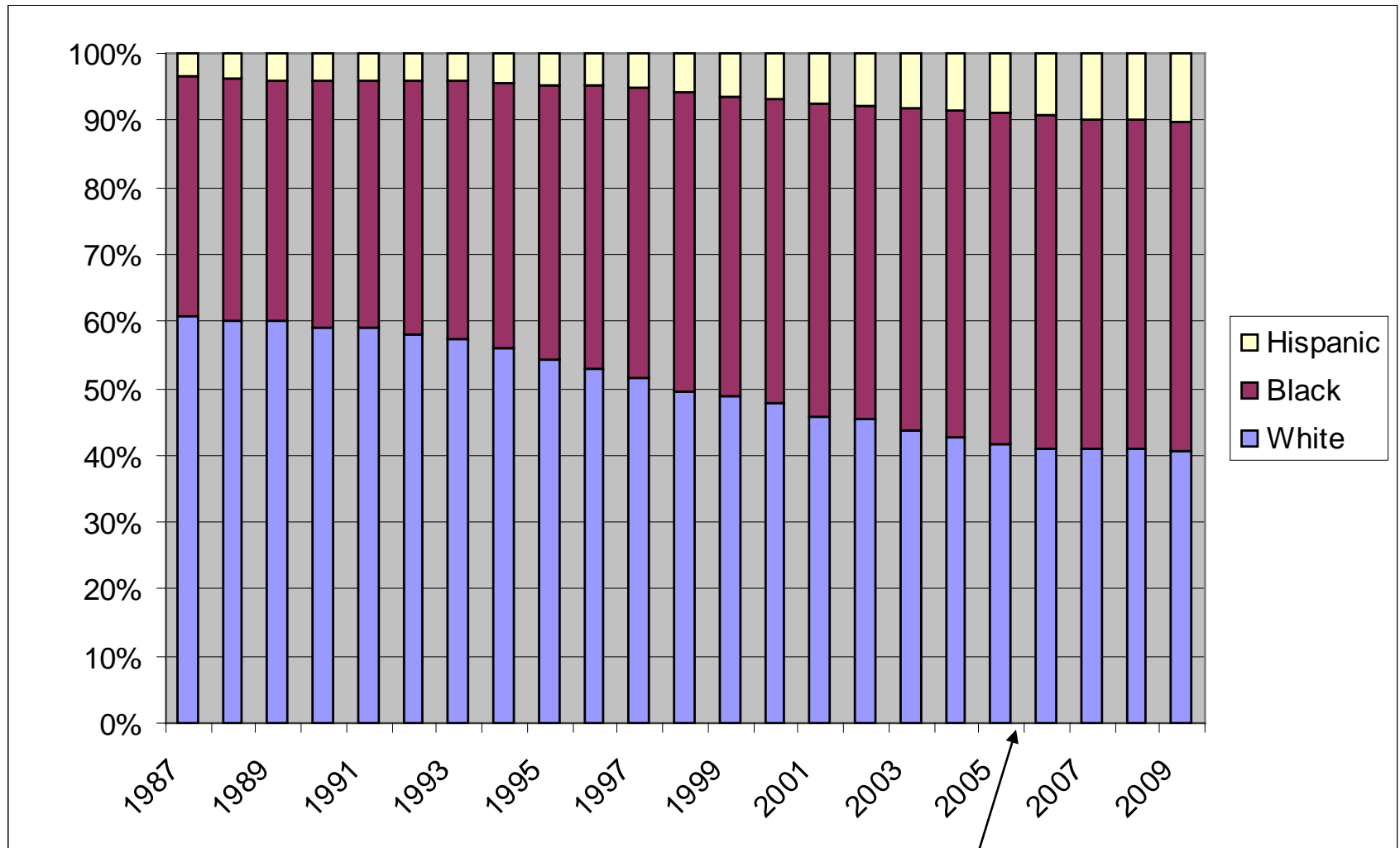
# Value of Increased Enrollment

- Under Michigan's school finance system all operating costs financing is essentially fixed by state law--\$7,765 (2009-2010)
- With 2,405 additional students, additional district revenue from increased enrolment equals \$18.7 million
- Each additional student brings in a net surplus of around \$2,500 (\$7,765-\$5,000)
- Families coming to KPS from outside the area bring additional workers to the region—possibly higher house values and commercial property values

# Racial/Ethnic Composition

- Stabilization may help maintain racial integration in schools, avoiding “tipping”
- An integrated school district may be better able to maintain political support from a diverse community, and may be more attractive to potential in-migrants to Kalamazoo.

# Trend in Racial/Ethnic Composition of KPS Students



Promise Announced

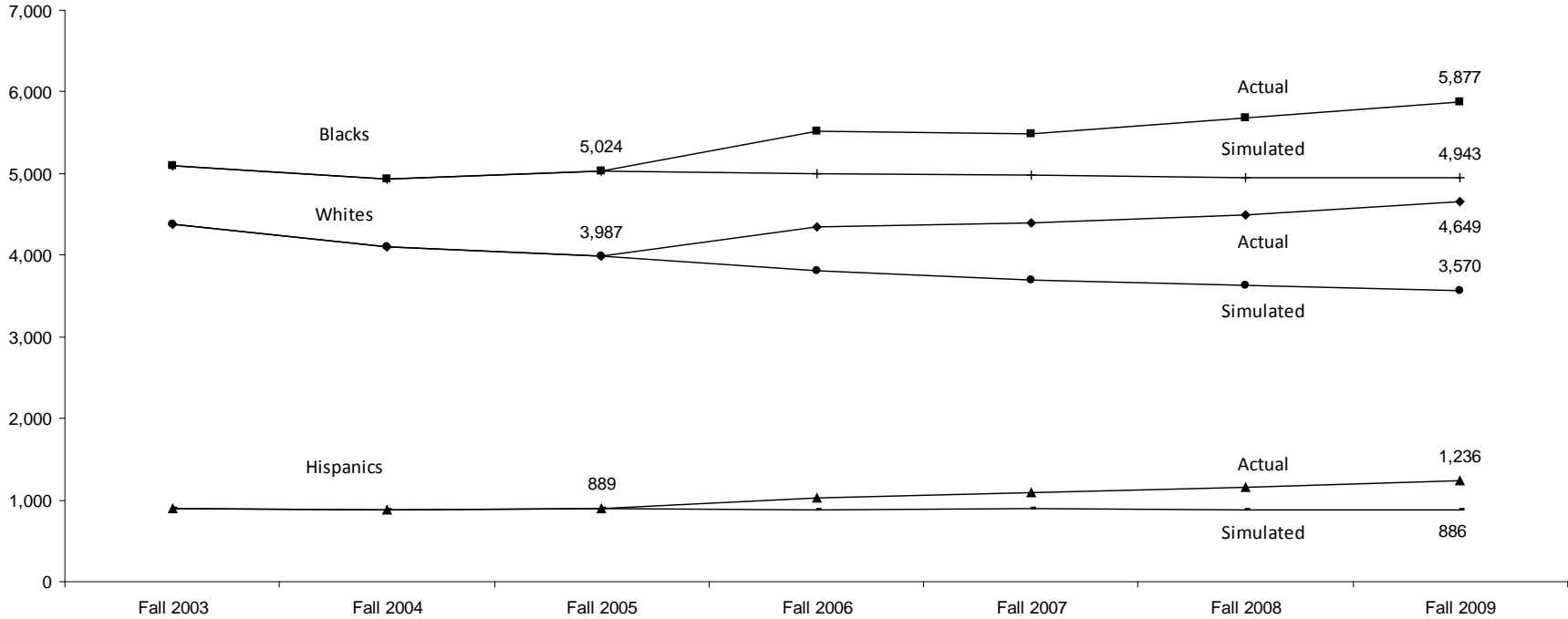
Table 5: Decomposition of Promise Enrollment Effects for Selected Ethnic Groups Based on Whether Due to Changes in Entry Numbers or Exit Rates

		Actual enrollment	No change in entry numbers or exit rates	Change in entry numbers only	Change in exit rates only	Percent of Promise effect due to changes in entry numbers	Percent of Promise effect due to changes in exit rates
Black	Fall 2003	5092	5092	5092	5092		
	Fall 2004	4931	4931	4931	4931		
	Fall 2005	5024	5024	5024	5024		
	Fall 2006	5517	5001	5254	5264	49.0%	51.0%
	Fall 2007	5493	4977	5182	5283	39.8%	59.3%
	Fall 2008	5674	4957	5301	5324	47.9%	51.2%
	Fall 2009	5877	4943	5321	5475	40.5%	57.0%



		Actual enrollment	No change in entry numbers or exit rates	Change in entry numbers only	Change in exit rates only	Percent of Promise effect due to changes in entry numbers	Percent of Promise effect due to changes in exit rates
White	Fall 2003	4380	4380	4380	4380		
	Fall 2004	4108	4108	4108	4108		
	Fall 2005	3987	3987	3987	3987		
	Fall 2006	4352	3817	4107	4062	54.3%	45.7%
	Fall 2007	4397	3702	4014	4069	44.9%	52.8%
	Fall 2008	4493	3623	3980	4104	41.0%	55.3%
	Fall 2009	4649	3570	3994	4177	39.4%	56.3%

**Figure 13. Actual vs. Simulated Non-Promise Enrollment, by Ethnic Group and Year**



*Note:* Underlying data is individual student data from KPS. Actual ethnic group enrollment data is the number of students in each ethnic group enrolled as of the fall count day. Simulated enrollment is enrollment if average pre-Promise entry numbers and exit rates, estimated for each ethnic group and grade separately, had persisted for post-Promise period.

# Student Test Scores

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- Expect an increase in student achievement because of the greater emphasis on qualifying for college admission
- Financial incentives (scholarship) may not be particularly effective (Fryer, 2010)
  - Except if financial incentives are geared to increasing inputs
  - Students understand educational “production” function
- Effects on achievement would be expected to take place gradually over time

# Measures

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- Included units data on the math and reading portion of the MEAP for grades 3 through 8 from the fall of 2005 to the fall of 2009
- Rescale trends in average MEAP scores
  - Show how schools typically improve student achievement
  - Effect size units = dividing changes in test scores due to program by test's standard deviation (MEAP=25)
  - Divided change in test scores for grade x by the typical change in test scores from grade x to grade x+1
- Grade level improvement over time provides a rough measure of percentage productivity improvement over time

## MEAP Reading

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	3rd grade	4th grade	5th grade	6th grade	7th grade	8th grade	Average 3rd through 8th grades
	Adjusted for changes in student composition						
2005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	-0.02	0.26	0.34	0.78	0.10	0.67	0.35
2007	0.16	0.35	1.45	0.61	-0.36	0.49	0.45
2008	0.33	0.24	0.77	1.40	0.79	1.27	0.80
2009	0.72	0.96	1.54	1.59	1.79	2.11	1.45
Average, 2006- 2009	0.29	0.45	1.03	1.09	0.58	1.13	0.76

(Individual KPS student data)

## MEAP Math

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	3rd grade	4th grade	5th grade	6th grade	7th grade	8th grade	Average 3rd through 8th grades
	Adjusted for changes in student composition						
2005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	-0.26	0.25	0.35	0.48	0.53	0.60	0.32
2007	0.02	0.19	0.85	1.24	0.90	0.66	0.64
2008	0.30	0.42	0.59	2.13	1.81	1.75	1.17
2009	0.48	0.90	0.94	2.07	2.28	1.80	1.41
Average, 2006- 2009	0.14	0.44	0.68	1.48	1.38	1.21	0.89

(Individual KPS student data)

# MEAP Reading

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Adjusted for student mix	3rd grade	4th grade	5th grade	6th grade	7th grade	8th grade	Average 3rd through 8th grade
KPS	0.58	0.77	1.33	1.26	1.68	2.45	1.34
Battle Creek	0.55	0.39	0.61	1.04	1.22	1.83	0.94
Jackson	0.51	0.62	0.77	1.19	1.04	1.86	1.00
Lansing	0.48	0.59	0.91	1.18	0.53	1.89	0.93
Romulus	0.56	0.34	1.18	1.40	1.95	2.97	1.40
Ypsilanti	0.09	0.64	1.12	1.46	1.03	2.50	1.14
Average of "similar" districts	0.44	0.51	0.92	1.25	1.16	2.21	1.08

(District aggregate data)

## MEAP Math

	3rd grade	4th grade	5th grade	6th grade	7th grade	8th grade	Average 3rd through 8th grade
Adjusted for student mix							
KPS	0.60	0.96	1.07	2.04	2.51	2.05	1.54
Battle Creek	0.65	0.26	1.17	1.50	2.29	1.68	1.26
Jackson	0.52	0.86	1.03	2.33	2.27	1.66	1.44
Lansing	0.38	0.62	0.95	1.52	1.49	0.53	0.91
Romulus	0.49	0.20	-0.08	1.75	2.86	2.12	1.22
Ypsilanti	-0.32	0.41	0.62	2.00	2.59	2.53	1.30
Average of "similar" districts	0.34	0.47	0.74	1.82	2.30	1.70	1.23

(District aggregate data)



# Summary

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- Enrollment increased after the Promise due to decline in exit rates, not just a one-time surge in entrants
  - Dynamics of entrant numbers suggests that KPS will experience Promise-related increases in enrollment for next several years
- White and Black student percentages stabilized after the Promise, whereas white percentage was expected to continue to decline
- Post-Promise era accompanied by large increases in KPS reading and math test scores, even when compared with similar districts in the aggregate

# Contact Information

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