

Free Primary Education in Kenya: Enrolment, Achievement and Local Accountability

Tessa Bold CSAE, Oxford
Mwangi Kimenyi U of Connecticut
Germano Mwabu U of Nairobi
Justin Sandefur CSAE, Oxford

March 23, 2009

Outline

Background and Motivation

- Kenya's education system

- Hypotheses

- Data sources

Enrolment

- FPE and the market for private schooling

- Has FPE reduced inequality in educational attainment?

Achievement

Conclusions

Outline

Background and Motivation

Kenya's education system

Hypotheses

Data sources

Enrolment

FPE and the market for private schooling

Has FPE reduced inequality in educational attainment?

Achievement

Conclusions



From “Harambee” to FPE

Harambee

- Movement focused on self-help; focus on education and development. Concretely, fundraising drives, usually involving a public gathering.
- Actively cultivated by the Kenyatta gov't after independence. Contributions were intended to be voluntary.
- In practice school committees often set and recorded contribution levels.

FPE

- Fees abolished in all gov't schools as of the 2003 academic year.
- Funding for non-salary expenditure comes in the form of a capitation grant from the central government.

Constant

- All teachers recruited, hired/fired, assigned/reassigned and paid centrally.
- School Management Committees (SMCs) have official governing authority for each school.



From “Harambee” to FPE

Harambee

- Movement focused on self-help; focus on education and development. Concretely, fundraising drives, usually involving a public gathering.
- Actively cultivated by the Kenyatta gov't after independence. Contributions were intended to be voluntary.
- In practice school committees often set and recorded contribution levels.

FPE

- Fees abolished in all gov't schools as of the 2003 academic year.
- Funding for non-salary expenditure comes in the form of a capitation grant from the central government.

Constant

- All teachers recruited, hired/fired, assigned/reassigned and paid centrally.
- School Management Committees (SMCs) have official governing authority for each school.



From “Harambee” to FPE

Harambee

- Movement focused on self-help; focus on education and development. Concretely, fundraising drives, usually involving a public gathering.
- Actively cultivated by the Kenyatta gov't after independence. Contributions were intended to be voluntary.
- In practice school committees often set and recorded contribution levels.

FPE

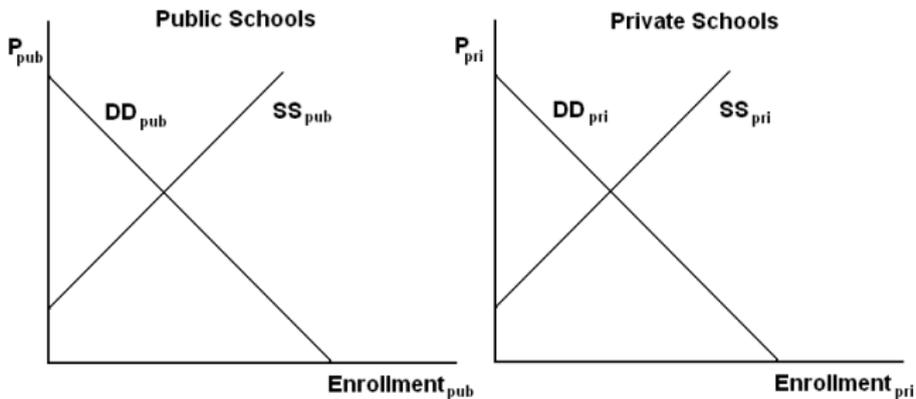
- Fees abolished in all gov't schools as of the 2003 academic year.
- Funding for non-salary expenditure comes in the form of a capitation grant from the central government.

Constant

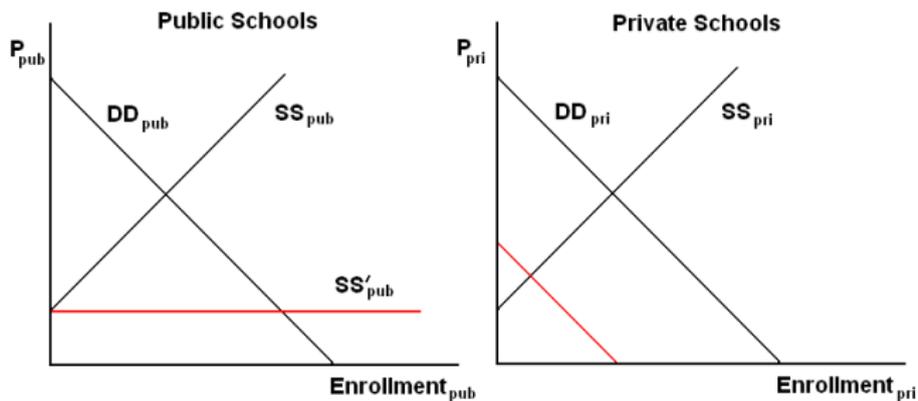
- All teachers recruited, hired/fired, assigned/reassigned and paid centrally.
- School Management Committees (SMCs) have official governing authority for each school.



FPE in a Supply & Demand Framework

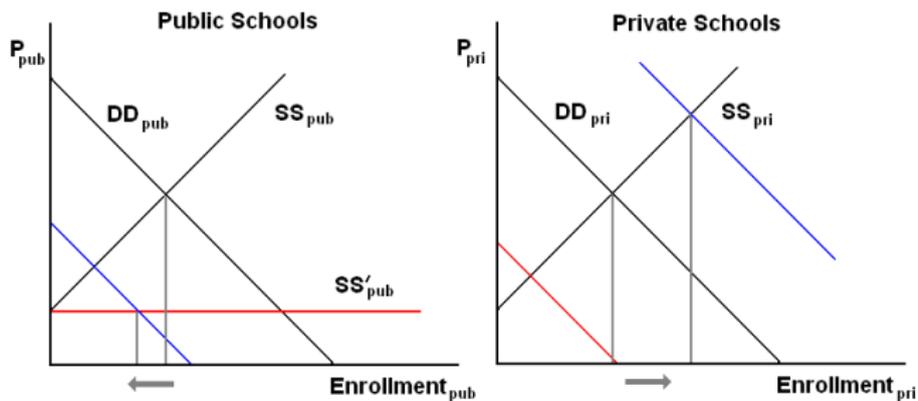


FPE in a Supply & Demand Framework





FPE in a Supply & Demand Framework





Theoretical Mechanisms at Work under FPE

Three channels linking FPE to student performance:

1. Increased funding (perhaps)

- Increased government funding
- Ambiguous net effect on total funds at school level due to abolition of local fundraising.

2. Changes in the pool of students

- Fees are abolished so more children can access education.
- Of course, these children may be different from existing students in terms of socio-economic background, age, ability, etc.

3. Increased centralization \Rightarrow loss of local accountability

- SMCs no longer raise funds for the school, thus their governance power is undermined
- Parents no longer pay for the school, so may lose sense of ownership
- Authority over hiring and firing, etc. is held by Ministry, with little information on school management.

Theoretical Mechanisms at Work under FPE

Three channels linking FPE to student performance:

1. Increased funding (perhaps)

- Increased government funding
- Ambiguous net effect on total funds at school level due to abolition of local fundraising.

2. Changes in the pool of students

- Fees are abolished so more children can access education.
- Of course, these children may be different from existing students in terms of socio-economic background, age, ability, etc.

3. Increased centralization ⇒ loss of local accountability

- SMCs no longer raise funds for the school, thus their governance power is undermined
- Parents no longer pay for the school, so may lose sense of ownership
- Authority over hiring and firing, etc. is held by Ministry, with little information on school management.

Theoretical Mechanisms at Work under FPE

Three channels linking FPE to student performance:

1. Increased funding (perhaps)
 - Increased government funding
 - Ambiguous net effect on total funds at school level due to abolition of local fundraising.
2. Changes in the pool of students
 - Fees are abolished so more children can access education.
 - Of course, these children may be different from existing students in terms of socio-economic background, age, ability, etc.
3. Increased centralization ⇒ loss of local accountability
 - SMCs no longer raise funds for the school, thus their governance power is undermined
 - Parents no longer pay for the school, so may lose sense of ownership
 - Authority over hiring and firing, etc. is held by Ministry, with little information on school management.

Data sources: Household survey data

We combine data from two household surveys, one prior to and the other following the introduction of FPE.

WMS

- Welfare Monitoring Survey, 1997
- 10,874 households nationwide
- 13,639 children age 6 to 13

KIHBS

- Kenya Integrated Household Budget Survey, 2006
- 13,212 households nationwide
- 14,610 children age 6 to 13

Overlap

- Socioeconomic indicators: household consumption, assets, education of HH head
- Children's current enrolment status, grade level, school type
- Expenditure on education, fees and other categories

Data sources: Administrative data

School level data comprises a census of all primary schools in Kenya, spanning the period before and since FPE.

- KNEC**
 - Kenya National Examinations Council
 - Administers the Kenya Certificate of Primary Education (KCPE) exam
 - Test covers English, Kiswahili, math, science, history, art and business
- EMIS**
 - Education Management Information System, run by the MoE in collaboration with the Teacher Service Commission
 - Panel of schools from 1998 to 2005, averaging just over 15,000 schools per year
 - Includes data on enrolment by grade, age and sex
 - Teacher level data with experience and qualifications

Outline

Background and Motivation

Kenya's education system

Hypotheses

Data sources

Enrolment

FPE and the market for private schooling

Has FPE reduced inequality in educational attainment?

Achievement

Conclusions

How has household educational expenditure changed?

We begin by looking simply at the cost of schooling in Kenya before and after FPE, distinguishing between fees and other expenditures, and emphasizing the contrast between the public and private system. We estimate these costs as follows:

$$E_{it} = \beta_P P_{it} + \beta_S Sec_{it} + \beta_{Pt} P_{it} T + \beta_{St} Sec_{it} T + \beta_t T + \varepsilon_{it} \quad (1)$$

where E_{it} is a measure of education expenditure for household i in period t , P_{it} and Sec_{it} measure the number of household members enrolled in primary and secondary education respectively.

Table: Household educational expenditure

	Exp. on Primary		Exp. on Secondary	
	All (1)	Fees (2)	All (3)	Fees (4)
Children in public primary	638.24 (19.69) ^{***}	217.15 (14.50) ^{***}		
Children in private primary	3592.08 (640.44) ^{***}	2440.98 (574.23) ^{***}		
FPE × Children in public primary	-297.09 (26.63) ^{***}	-197.30 (19.32) ^{***}		
FPE × Children in private primary	4325.59 (962.48) ^{***}	2642.72 (822.85) ^{***}		
Children in public secondary			10192.02 (501.25) ^{***}	7496.12 (459.64) ^{***}
Children in private secondary			15933.68 (4419.98) ^{***}	13289.38 (4268.23) ^{***}
FPE × Children in public secondary			-1984.66 (600.33) ^{***}	-3659.26 (496.41) ^{***}
FPE × Children in private secondary			-215.22 (5242.75)	-3234.19 (4849.94)
Obs.	17,238	17,238	17,238	17,238

Has FPE reduced inequality in educational attainment?

To answer this question we look at whether the relationship between socio-economic indicators and enrolment status has weakened since the introduction of FPE. Using the KIHBS and WMS data, we estimate:

$$S_{it} = \gamma_0 + \gamma_x \mathbf{X}_{it} + \gamma_{xt} \mathbf{X}_{it} T + \gamma_t T + \mu_{it} \quad (2)$$

where S_{it} is an indicator of enrollment for child i in period t , \mathbf{X}_{it} is a vector of observable child, parent and household characteristics, T is a dummy taking a value of one after the onset of FPE and μ is an i.i.d. error term.

Table: Private-school enrolment determinants: Pooled cross-sectional estimates (OLS/LPM)

	Primary			Secondary
	6-13 (1)	6-9 (2)	10-13 (3)	14-18 (4)
Log food expenditure	.019 (.004)***	.022 (.006)***	.015 (.006)**	.005 (.004)
FPE × Log food expenditure	.028 (.008)***	.031 (.011)***	.023 (.011)**	.013 (.008)*
Education of household head	.004 (.0006)***	.004 (.0008)***	.003 (.0008)***	.004 (.0008)***
FPE × Education of household head	.007 (.001)***	.007 (.001)***	.007 (.001)***	-.0002 (.001)
Male dummy	-.003 (.005)	-.002 (.008)	-.004 (.006)	.005 (.006)
FPE × male dummy	.009 (.008)	.005 (.012)	.015 (.011)	-.009 (.008)
FPE	-.195 (.052)***	-.207 (.073)***	-.175 (.072)**	-.074 (.051)
Obs.	27251	14241	13010	14332

Outline

Background and Motivation

Kenya's education system

Hypotheses

Data sources

Enrolment

FPE and the market for private schooling

Has FPE reduced inequality in educational attainment?

Achievement

Conclusions

Table: Average KCPE Scores in Public and Private Schools

Year	Public	Private
2001	243.30	290.84
2002	243.02	293.17
2003	242.92	297.09
2004	243.86	298.56
2005	243.36	291.53

The rise of the private sector & the decline of public performance

Table: School-fixed effects regression

	(1)	(2)
	Average total KCPE score within school	t-value
Density of private schools in district	-23.32***	(-3.63)
Pupils per class Yr.8	-0.38***	(-29.26)
Avg. teacher gradecode	0.349***	(6.80)
Avg. age of teachers	-1.42*	(-1.69)
Avg. age of teachers sq.	0.01	(1.55)
% students > 14 in Yr. 8	-2.59***	(-7.14)
Observations	46,636	

Outline

Background and Motivation

Kenya's education system

Hypotheses

Data sources

Enrolment

FPE and the market for private schooling

Has FPE reduced inequality in educational attainment?

Achievement

Conclusions

Summary of findings

- Cost**
- Since FPE fees for public primary have fallen to zero, and total costs nearly halved.
 - Cost of private education has more than doubled, now more than 20 times more expensive than public ed.
- Enrol.**
- Inequality in education access has declined by our preferred measure.
 - However, enrolment rates for public schools have actually declined, as poor students come in, richer students have fled to private schools in greater or equal measure.
- Perf.**
- Net effect is an accelerated decline in the average socio-economic status of public school students.
 - Coincides with a rise in teacher-pupil ratios (due to hiring freeze + influx of overage students)
 - Large performance gap between private and public schools.
 - Flight to private schools associated with fall in public school performance.

Summary of findings

- Cost**
- Since FPE fees for public primary have fallen to zero, and total costs nearly halved.
 - Cost of private education has more than doubled, now more than 20 times more expensive than public ed.
- Enrol.**
- Inequality in education access has declined by our preferred measure.
 - However, enrolment rates for public schools have actually declined, as poor students come in, richer students have fled to private schools in greater or equal measure.
- Perf.**
- Net effect is an accelerated decline in the average socio-economic status of public school students.
 - Coincides with a rise in teacher-pupil ratios (due to hiring freeze + influx of overage students)
 - Large performance gap between private and public schools.
 - Flight to private schools associated with fall in public school performance.

Summary of findings

- Cost**
- Since FPE fees for public primary have fallen to zero, and total costs nearly halved.
 - Cost of private education has more than doubled, now more than 20 times more expensive than public ed.
- Enrol.**
- Inequality in education access has declined by our preferred measure.
 - However, enrolment rates for public schools have actually declined, as poor students come in, richer students have fled to private schools in greater or equal measure.
- Perf.**
- Net effect is an accelerated decline in the average socio-economic status of public school students.
 - Coincides with a rise in teacher-pupil ratios (due to hiring freeze + influx of overage students)
 - Large performance gap between private and public schools.
 - Flight to private schools associated with fall in public school performance.