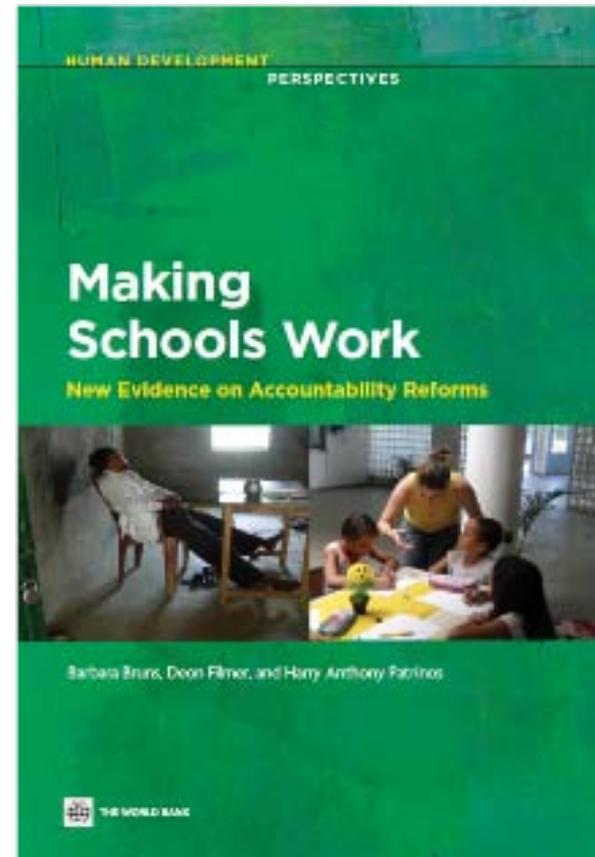


Making Schools Work

New Evidence on Accountability Reforms

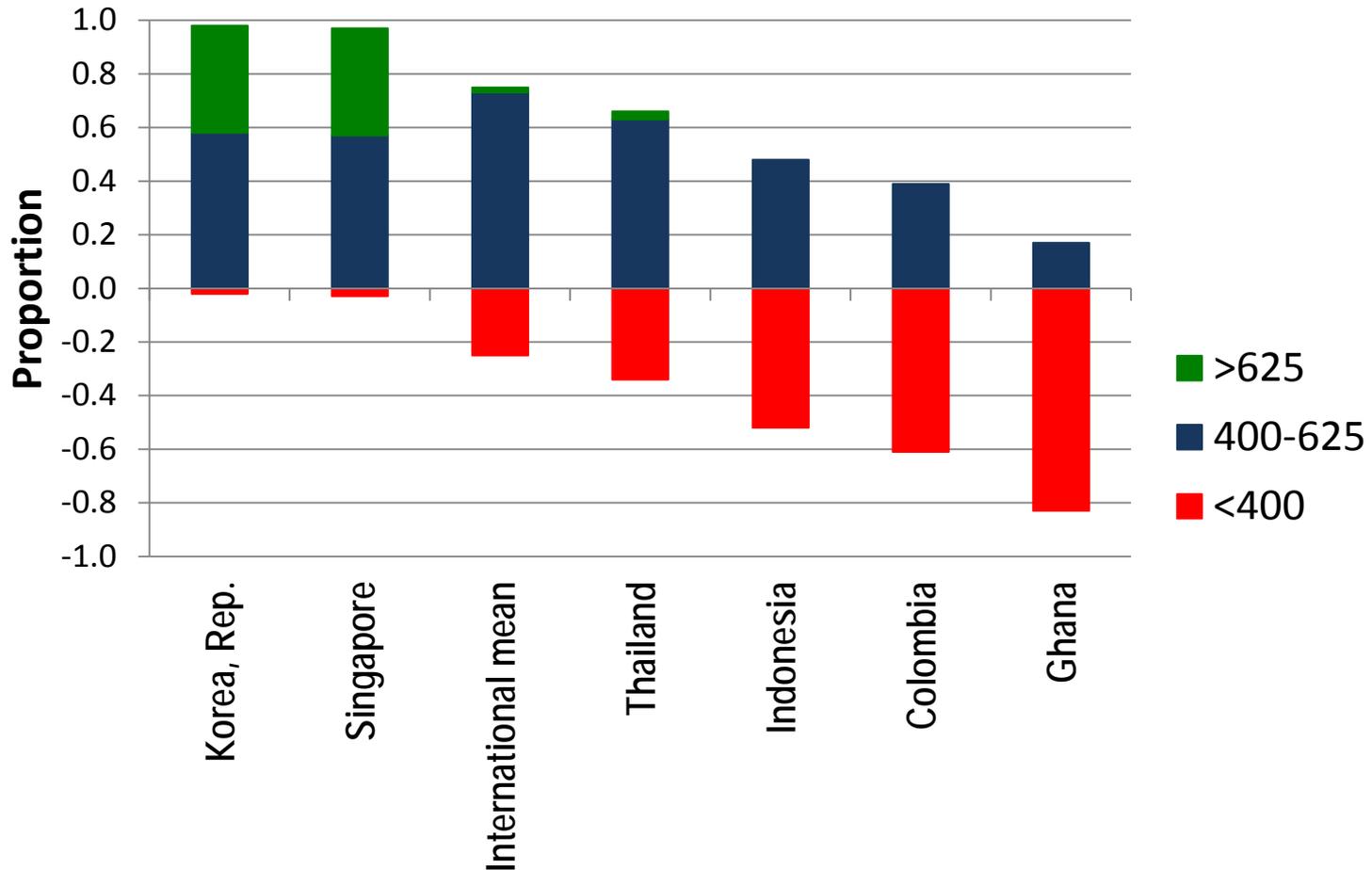
Barbara Bruns, Deon Filmer and Harry
Patrinos
The World Bank

Addis Ababa, Ethiopia
21-25 May, 2012



Learning outcomes are poor

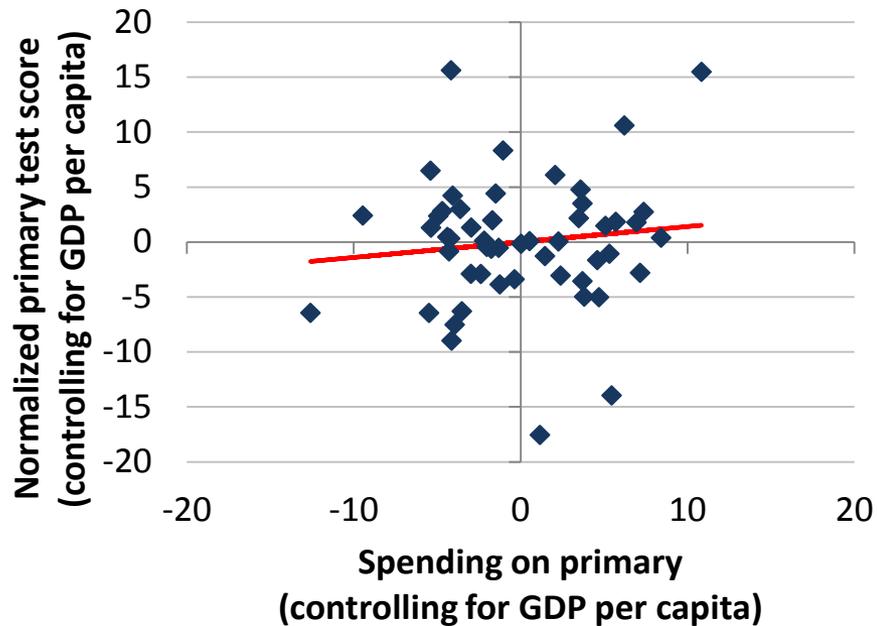
TIMSS Math Proficiency, 2007: Proportions of Grade 8 students scoring at “low” “intermediate/high” and “advanced benchmarks



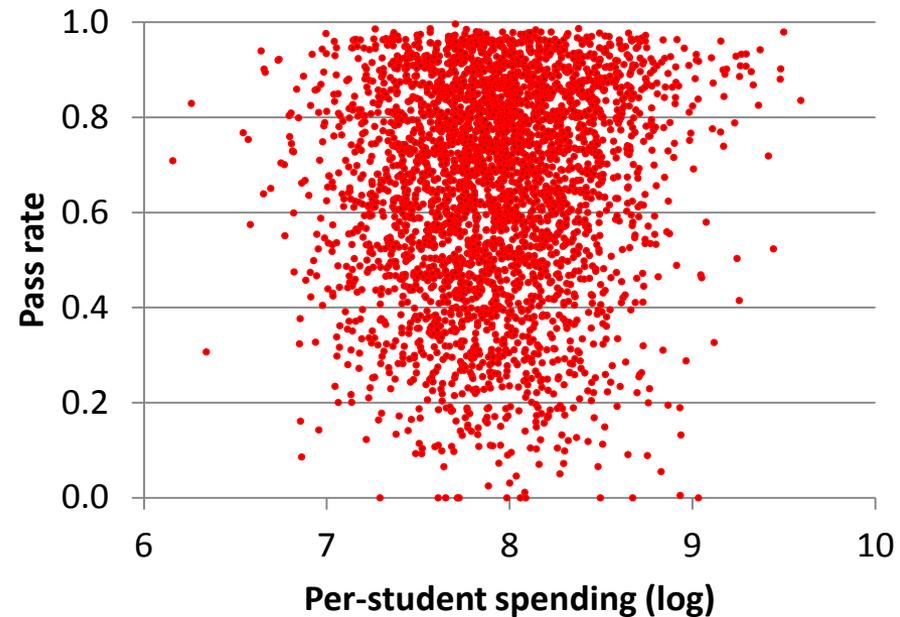
What's the Problem?

... and money doesn't seem to fix the problem

Primary math test scores vs. global public education spending



Malawi Primary School Leaving Exam (PSLE) pass rate vs. per-student spending



◆ Normalized primary test score (controlling for GDP per capita)

— Predicted Normalized test score

Service delivery failure: funding is available, but...

- **Inequitably allocated** across districts, income groups, ethnic groups
- **“Leakage”**: only 20-50 percent of intended funding arrives at school level (Uganda, Zambia, Ghana, Brazil)
- **Teacher absence**: 20% across 9 developing countries in 2004
- **Loss of instructional time**: only 39% of class time in Ghana; 66% in Brazil; 75% in Cambodia used for teaching

What's the problem: “Service delivery failure”



What's the problem: “Service delivery failure”



Strategies for improving learning outcomes

- Supply side policies
 - Increased inputs (classrooms, textbooks, extra tutors, teacher training)
- Demand side policies
 - Scholarships, CCTs
- Child endowments/readiness to learn
 - ECD, deworming
- Accountability reforms
 - Change the environment in which decisions about resource allocation get made

Rationale for a focus on accountability

- Improving quality is **not** necessarily just a set of technocratic decisions
 - What is the right number of textbooks per student that the ministry should send to each school
 - What is the right teacher training protocol
- The **level and mix** of school-level inputs is determined by the various actors in the system—based on their relationships of power, **accountability** and **incentives**

A focus on three approaches to increasing accountability

- Theoretical and intuitive potential
 - Some evidence of success (but weak base of rigorous evidence)
 - Widely promoted through World Bank operations (opportunity to generate evidence from our operations)
- **Information For Accountability**
 - The generation and dissemination of information about inputs, outputs, and/or outcomes.
 - **School Autonomy/School Based Management**
 - The decentralization of school-level decision making to school-level agents.
 - **Teacher Incentives**
 - The linking of teacher pay to measures of effort and performance and/or the hiring of local teachers whose performance is evaluated by the school community

How could **information for accountability** improve outcomes?

- **Increasing choice**
 - When there is school choice information can increase the “**market-pressure**” for performance
- **Increasing participation**
 - Information can shake up belief that performance is adequate
 - Can spur increased **monitoring**
- **Increasing voice**
 - Information can **empower** parents and communities vis a vis
 - School authorities (principals, teachers)
 - Local political and administrative authorities

An example: Pakistan School Report Cards

- 112 villages—treatment and control
 - 823 public and private schools
- **Round 1** (Baseline):
 - Jan-Feb 2004
 - School-Based (Students and teachers)
 - March-April 2004
 - Household based (Children and families)
- **Report Card Intervention** – Sept/Oct 2004
- **Round 2** (2005): Follow up 1
- **Round 3** (2006): Follow up 2

Pakistan: Summary of Results

- Initially **low quality private** schools:
 - **Increase** in learning outcomes (by 0.15 SD)
- Initially **high quality private** schools:
 - **Decrease** in school fees (by 21 percent)
- **Public** schools:
 - **Increase** in learning outcomes (by 0.10 SD)
- Intermediate impacts:
 - more likely to have textbooks
 - devoted around 30 more minutes per day to teaching and learning activities
- Importance of thinking about education **market**

Summary: Evidence on **information for accountability (1)**

Country	Authors	Intervention	Methodology	Findings
PAKISTAN	<i>Andrabi, as and Khwaja. 2009.</i>	Detailed information of externally collected data on performance, intensively disseminated to parents, teachers, and school administrators	RCT (2 years)	<i>Increased learning outcomes in public schools and initially poor-performing private schools; reduced fees at initially high-performing private schools</i>
INDIA Jaunpur District, Uttar Pradesh	<i>Banerjee et al 2008.</i>	Awareness Campaign: awareness about roles, rights, and responsibilities of school oversight committees; creating self-assessment tools and village-specific scorecards; contracting remedial teachers for reading instruction	RCT (3-6 months)	<i>Slightly increased awareness of roles, rights, and Responsibilities; no impact on behaviors; no impact on learning outcomes in “information-only” interventions</i>
INDIA three-state study (MP; UP, KA)	<i>Pandey et al 2009, 2010.</i>	Awareness Campaign: Promoting awareness about roles, rights, and responsibilities of school oversight committees	RCT (2 years)	<i>Increased awareness of roles and responsibilities, especially in higher socioeconomic groups; measureable impacts on learning outcomes detected</i>

Summary: Evidence on **information for accountability (2)**

Country	Authors	Intervention	Methodology	Findings
LIBERIA	<i>Piper and Korda 2010.</i>	Early Grade Reading Assessment: Disseminating EGRA results to communities; training teachers in reading instruction techniques	RCT (2 years)	<i>Large impacts of the two programs combined (limited to no impact of information-only intervention)</i>
CHILE	<i>Mizala and Urqiola 2007.</i>	School rankings: Publicizing top schools in comparison with schools that serve similar populations.	RDD (2-4 years)	<i>No impact on learning outcomes or behaviors.</i>
UGANDA	Reinikka and Svensson 2005, 2006. Bjorkman 2006.	Newspaper Campaign: Publicizing through the media the amounts and timing of capitation-grant distribution to districts	IV (2 years)	<i>Reduced leakage in the flow of resources; increased enrollment and learning.</i>

Two key design issues

- Simplicity
 - Learning outcomes, inputs, funds, teachers, ...
 - Rights and responsibilities
 - [Pakistan example](#)
- “Socialization”
 - Extent of publicity
 - Assistance in interpreting information
 - Assistance with processing information and turning it into action

School Based Management:

Transfer of Authority

- Budget
- Hiring & firing
- Curriculum
- Infrastructure
- School calendar
- Monitoring
- School grants
- Dissemination

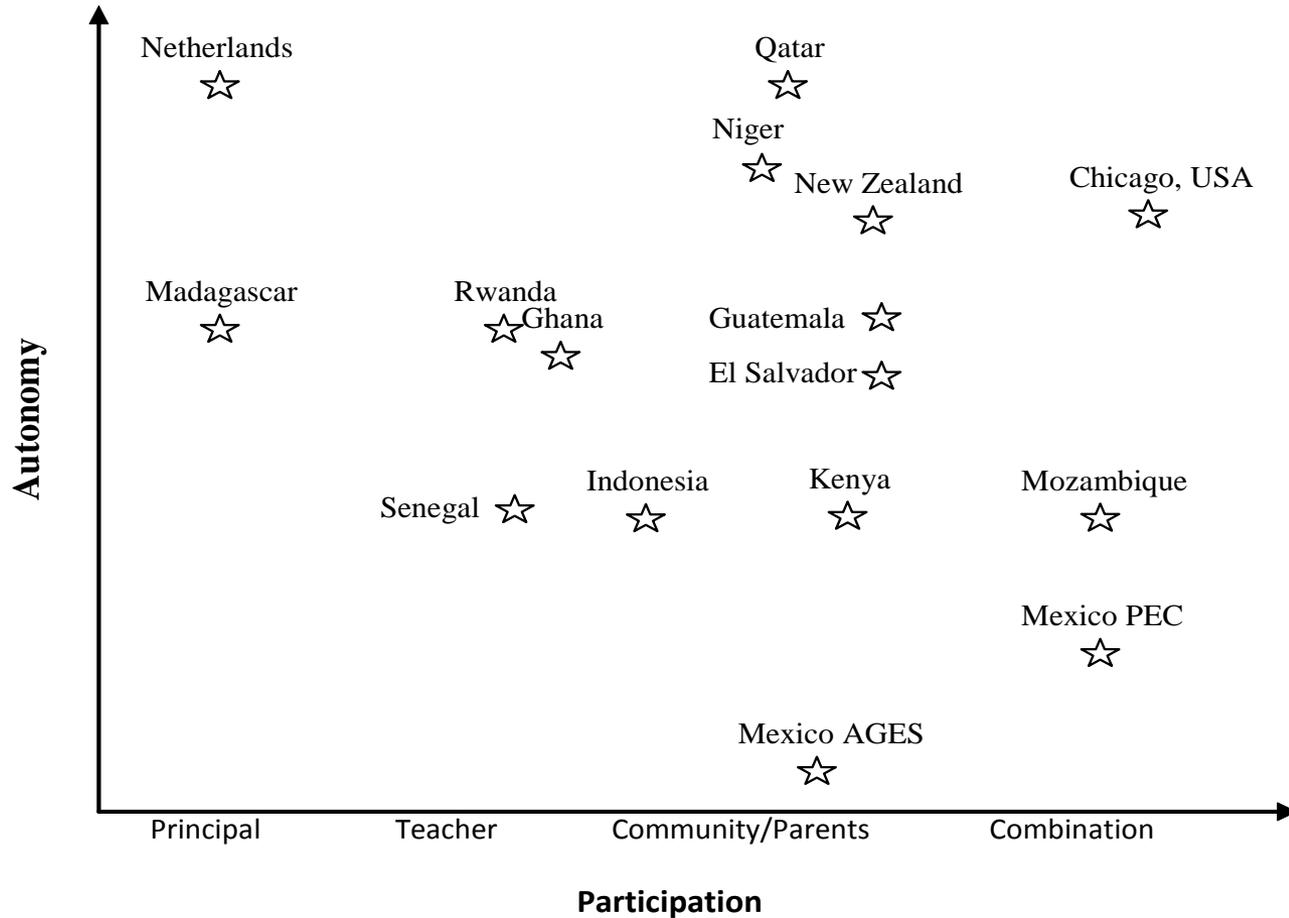
Goals:

1. Increase participation
2. Empower principals & teachers
3. Build local capacity
4. Improve school quality & efficiency

How could SBM improve outcomes?

- Those at the local level have more / better information
 - Key decisions about school personnel
 - Key decisions about spending
 - Changes in the educational process
 - Resource mobilization
- More involvement by parents implies accountability
 - Parents demand better decisions
 - Links between parental involvement and decisions
 - Changes in accounting
 - Changes in the school climate

Autonomy and Participation

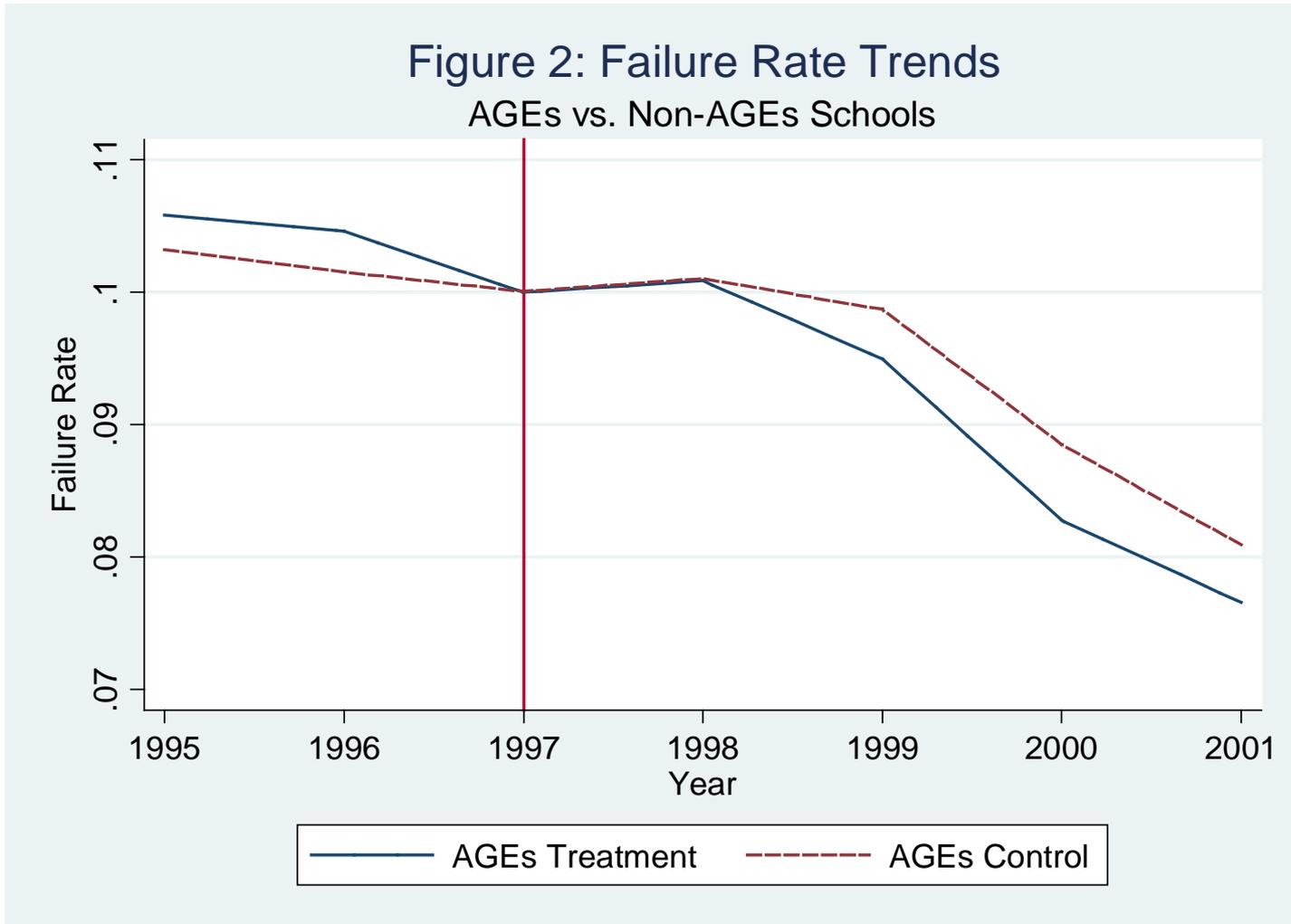


An example: Mexico's AGEs

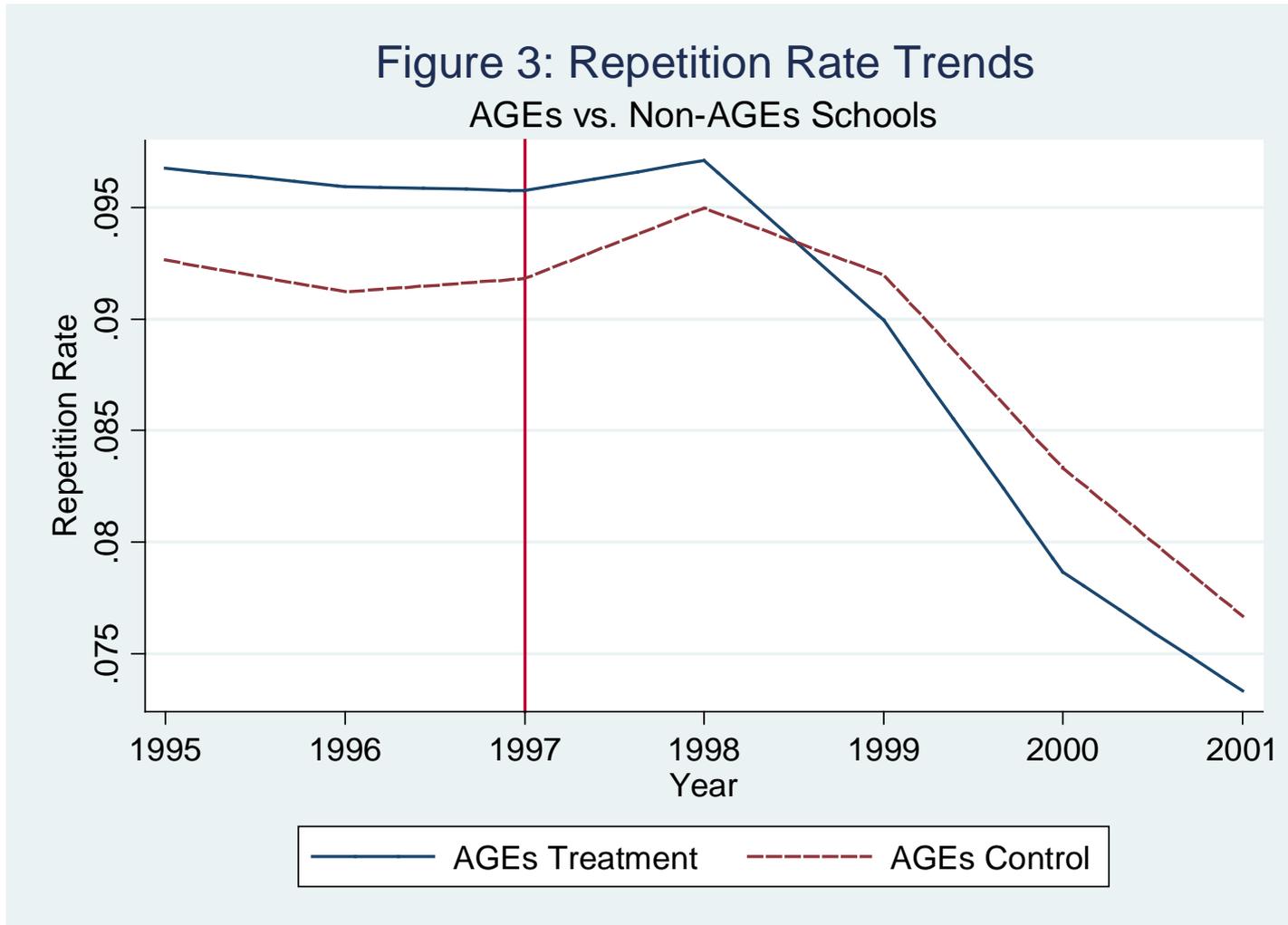
A limited number of functions devolved ...

School-Based Management Programs		
	AGEs	Chicago
Funds per school	\$5,000	\$37,000
Use funds for books and infrastructure	Yes	Yes
Design programs for teacher training	Yes	Yes
Hire teachers	No	Yes
Define teacher salaries	No	Yes
Design curriculum	No	Yes

...but large impact (1)



...but large impact (2)



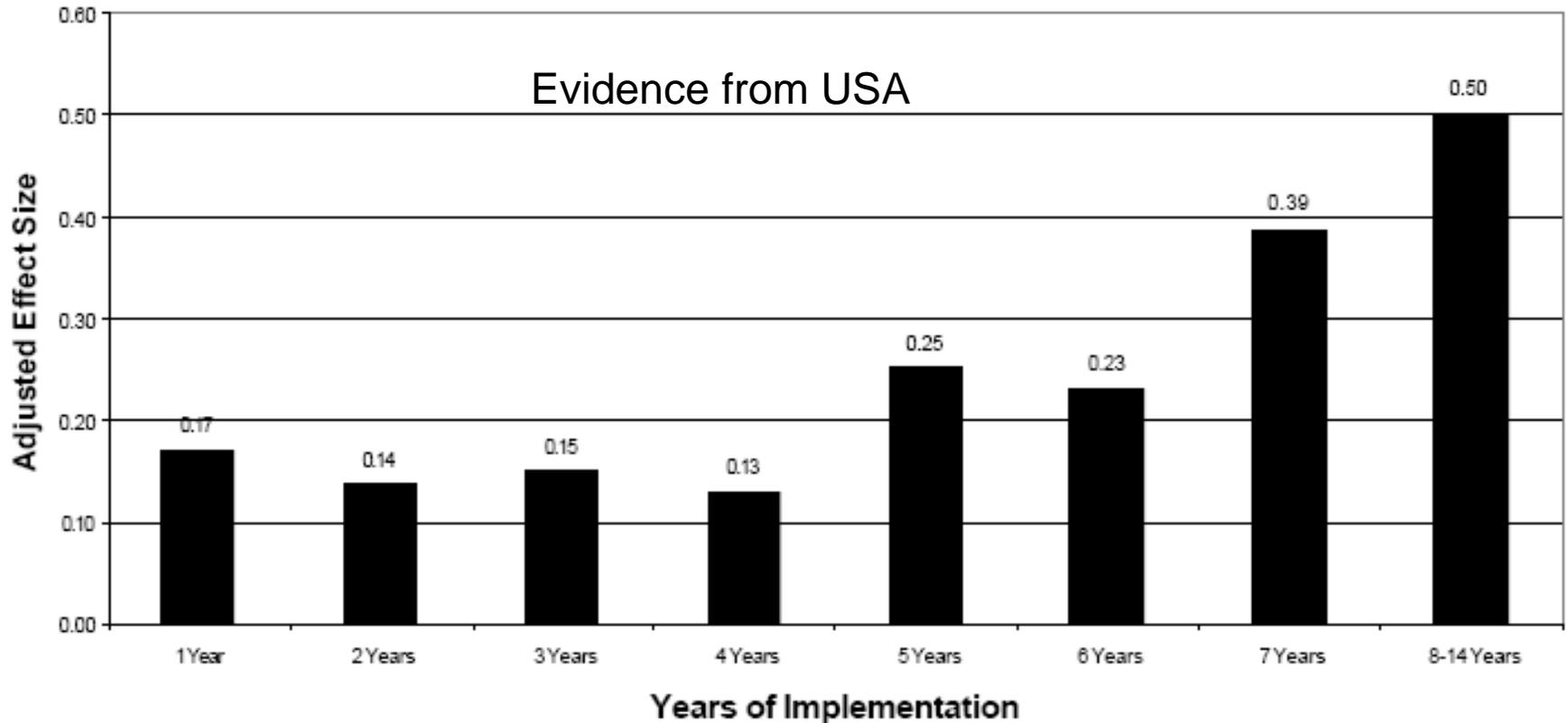
Summary: Evidence on school-based management (1)

Country	Authors	Intervention	Methodology	Findings
NEPAL	<i>Chaudhury 2011</i>	Communities express desire to take over management of schools (receive 1-time incentive grant)	Quasi-experimental randomization approach (IV & DD)	<i>Reduction in out of school children; reduction in repetition; increased progression; equity (disadvantaged caste perform better)</i>
PAKISTAN	<i>Das et al. forthcoming</i>	School councils constituted following certain rules; NGO hired to manage school w/ school council, receive \$4000	RCT	<i>Thus far, no change in enrollment or teacher absenteeism More forthcoming</i>
KENYA	<i>Duflo, Dupas & Kremer 2007</i>	Training of school committees to monitor teachers on performance & committee-based hiring of teachers (versus headmaster hiring of new teachers)	RCT	<i>Higher student test scores, lower teacher absenteeism, small change in student dropout</i>

Summary: Evidence on school-based management (2)

Country	Authors	Intervention	Methodology	Findings
INDONESIA	<i>Pradhan et al. 2010</i>	School-based management	RCT	<i>Positive effect on learning outcomes; strongest for elections in combination with linkage, increases scores in language by 0.51 standard deviations, math by 0.46</i>
MEXICO	<i>Gertler, Patrinos and Rodriguez 2010</i>	Doubling of school grant (AGE)	RCT	<i>Increased participation in first year; reduced dropout, improved reading scores for grade 3 only in year 2</i>
MEXICO	<i>Gertler, Patrinos, Rubio & Garcia 2010</i>	SBM grants in Colima (PEC)	RCT	<i>Improved learning outcomes for all, especially grade 3 cohort in program longest</i>

One key factor: Time to Impact



Key design issues:

From weak to strong accountability

- **Autonomy**
 - from small grants to school budget
- **Autonomy**
 - from monitoring to hiring/firing
- **Participation**
 - from passive to active parents
- **Assessment**
 - need information, assessments, dissemination, use
- **Accountability**
 - clear rules & responsibilities, with consequences

Teacher *incentives*

- School systems increasingly experimenting with “hard” incentives
 - **Contract teachers** (teachers hired locally with no civil service protection and monitored/evaluated by the community)
 - **Pay for performance** (annual bonus pay linked to student learning results)
- Both are strong levers to increase teachers’ accountability for results

How could **teacher incentives** improve outcomes?

- Motivate teachers to work harder and focus on student learning results
 - Reward results (or at least community satisfaction) with contract renewal
 - Reward results with bonus pay

In both cases, causal channel should be through change in teachers' effort or practice

An example: India AP: Teacher incentives Design Overview

	INCENTIVES (Conditional on Improvement in Student Learning)			
		NONE	GROUP BONUS	INDIVIDUAL BONUS
INPUTS (Unconditional)	NONE	CONTROL (100 Schools)	100 Schools	100 Schools
	EXTRA CONTRACT TEACHER	100 Schools		
	EXTRA BLOCK GRANT	100 Schools		

- Bonus formula

- Rs. 500 bonus for every 1% point improvement in average scores
- Calibrated to be around **3% of annual pay** (and equal to input treatments)

India AP: Summary of Study Design

- Study conducted across a representative sample of **500 primary schools** in 5 districts of AP
- **Baseline tests** in these schools (June/July 05)
- Monitor **process variables** over the course of the year via unannounced monthly tracking surveys (Sep 05 – Feb 06)
- Conduct **follow-up tests 1** to assess the impact of various interventions on learning outcomes (March/April 06)
- Provide bonus payments and communicate continuation of program (Sept 06)
- Conduct **follow-up tests 2** to assess the impact of various interventions on learning outcomes (March/April 07)

India AP: Summary of results

- Incentive schools **perform significantly better** (0.22 SD)
- Improvements are across the board (all grades, districts, baseline scores)
- Children in incentive schools perform better on **mechanical** and **conceptual** components of test, and also on non-incentive subjects
- No difference between group and individual incentives in the first year – **but in the second year, *the individual incentives start outperforming the group incentives***
- Teacher absence does not change, but incentive school teachers report **higher levels of teaching activity** conditional on attendance

Summary: Evidence on **contract teachers (1)**

Country	Authors	Intervention	Methodology	Results
India	<i>Banerjee, and others 2007</i>	Balsakhi extra teacher program.	RCT (3 years)	<i>(1) Test scores for schools with Balsakhi program 0.14 SD higher in first year, 0.28 SD higher in second year, and 0.1 SD higher one year after program end. (2) Largest gains by children at bottom of initial test score distribution and by children receiving remedial teaching.</i>
Kenya	<i>Duflo, Dupas, Kremer 2009</i>	Contract teachers	RCT (3 years)	<i>(1) Test scores for students of contract teachers were 0.21 SD higher than students of civil service teachers within the same school. (2) Contract teachers 30 percent more likely to be found in class teaching than were civil service teachers. (3) 11 percent decrease in absence rates for students of contract teachers. (4) Long-term impacts persisted only where school councils had received management training.</i>
India AP	<i>Muralidharan and Sundararaman 2010</i>	Contract teachers	RCT (2 years)	<i>(1) Test scores 0.15-0.13 SD higher in math and language, respectively, for students in schools with an extra contract teacher. (2) Contract teachers absent 16% vs. 27% of time for regular teachers. (3) Contract teachers found teaching 49% of time vs. 43% for regular teachers during spot visits. (4) Non-experimental estimation finds contract teachers as effective in producing learning gains, at one-fifth the cost of regular teachers.</i>

Summary: Evidence on **contract teachers (2)**

Country	Authors	Intervention	Methodology	Results
Mali, Niger, Togo	<i>Froelich, Bourdon, and Michaelowa 2007</i>	National contract teacher programs	Matching	<i>Contract teachers had positive effect on low-ability students in low grades and negative effect on high-ability students in high grades.</i>
Peru	<i>Alcazar and others 2006</i>	Provincial contract teacher program	Matching	<i>Contract teachers 12–13% more likely to be absent.</i>
India MP	<i>Goyal and Pandey 2009</i>	Statewide program (200 schools)	Matching (2 years)	<i>(1) Contract teachers absent 27% of time vs. 37% for regular teachers. (2) Contract teachers found teaching 37% of time vs. 25% during spot visits. (3) Student test scores positively associated with teacher effort. (4) Contract teachers' absence and activity rates worsen in second contract year but still better than regular teachers.</i>

Summary: Evidence on **pay for performance** (1)

Country	Authors	Intervention	Methodology	Results
India AP	<i>Muralidharan and Sundararaman 2009</i>	Individual: gain in student test scores (end-of-year vs. start-of-year scores for each classroom)	RCT (2 years)	<i>0.27 SD improvement in learning outcomes compared with control schools by second year of program</i>
Israel	<i>Lavy 2002</i>	Individual : avg. student scores on matriculation exams and avg. pass rate relative to predicted scores (adjusted for student SES). Tournament.	RDD, PSM	<i>18% increase for math and 17% increase for reading in exit exam credits</i>
India AP	<i>Muralidharan and Sundararaman 2009</i>	Group: avg. gain in student test scores at school level relative to baseline scores	RCT (2 years)	<i>0.16 SD improvement in learning outcomes compared with control schools by second year of program</i>
Kenya	<i>Glewwe, Ilas, and Kremer 2010</i>	Group: avg. gain in student test scores at school level relative to baseline scores. Tournament.	RCT	<i>(1) 0.14 SD improvement in learning outcomes. (2) gains not sustained one year after. (3) no decrease in teacher absence. (4) increase in exam prep sessions.</i>
Brazil	<i>Ferraz and Bruns 2011</i>	Group: school-level targets for improvement in IDEPE index (state test scores and student grade progression)	RDD	<i>0.16–0.20 SD improvement in learning outcomes in bonus schools compared with non-bonus schools in second year of program, controlling for first-year outcomes</i>

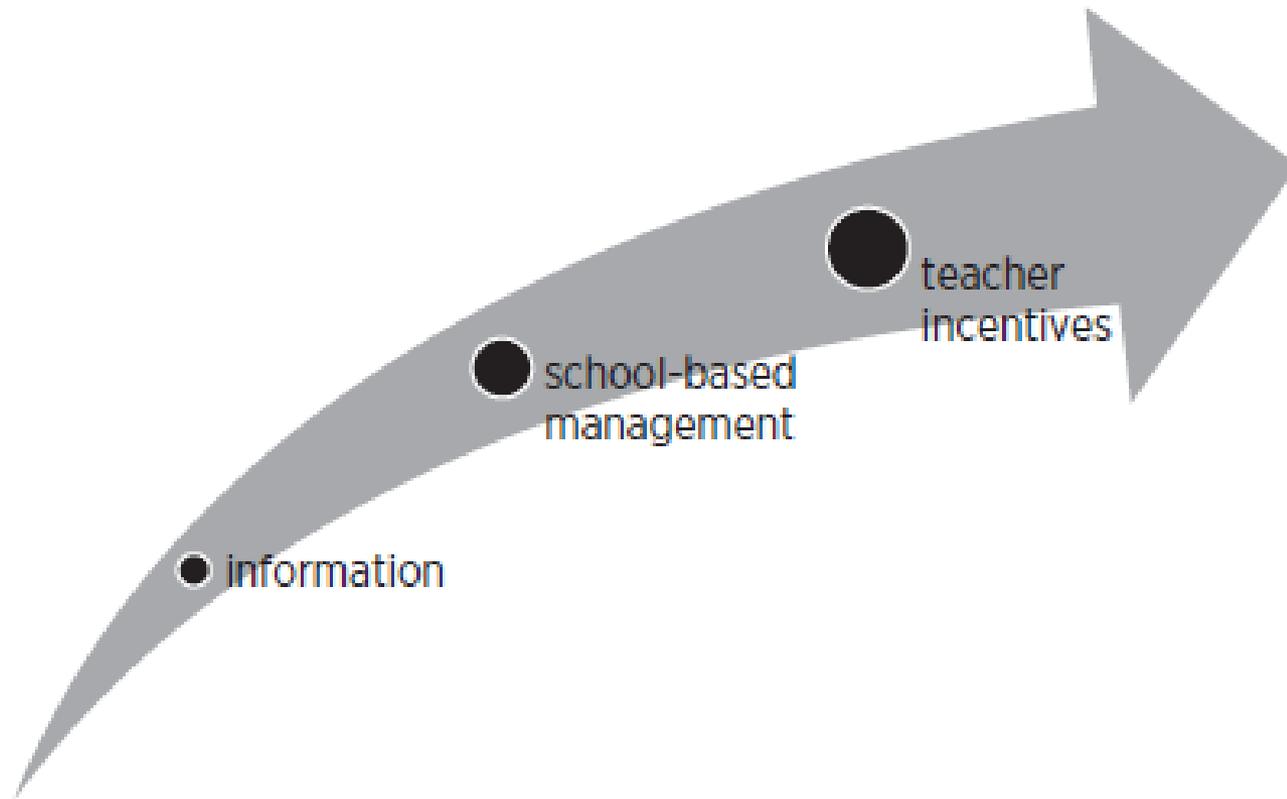
Summary: Evidence on **pay for performance** (2)

Country	Authors	Intervention	Methodology	Results
Israel	<i>Lavy 2009</i>	Group: school scores (matriculation, dropout, test scores) relative to predicted scores adjusted for student SES. Tournament.	RDD, PSM	<i>(1) 0.13 SD improvement in learning outcomes. (2) modest increases in credits earned and % of students taking matriculation exam.</i>
Chile	<i>SNED 2003, 2008; Rau and Contreras 2009.</i>	Group: Based on index (test scores; test score gains; other school factors). Tournament within school SES categories.	RDD	<i>0.08–0.10 SD improvement in learning outcomes for schools that barely achieved bonus compared with schools that barely missed bonus</i>
India: Rajasthan	<i>Duflo, Hanna and Ryan 2010</i>	Group: Based on teacher attendance (beginning/end day photo)	RCT	<i>(1) Teacher absence fell from 42% to 23%. (2) Student test scores increased 0.17 SD. (3) Grade completion increased.</i>
Kenya: pre-schools	<i>Kremer and others 2001</i>	Individual: school headmasters given resources to award teachers bonuses for good attendance	RCT	<i>(1) No decline in teacher absence rate (29%). (2) No change in pupil attendance or test scores.</i>

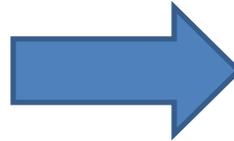
Key design issues

- **Contract teachers:**
 - Nature of monitoring
- **Pay for performance:**
 - Implementability (individual/group; criteria)
 - Acceptability of criteria
 - Design parameters:
 - **Noise** (how accurate is the performance measure)
 - **Locality** (how much is the measure related to actual effort)
 - **Predictability**
 - **Bonus size**
- **Perverse effects**

Interacting levers to increasing accountability



Goal:
Turning service delivery failure into success



Thank you

<http://go.worldbank.org/UHR0U2UQ60>

