# School accountability:

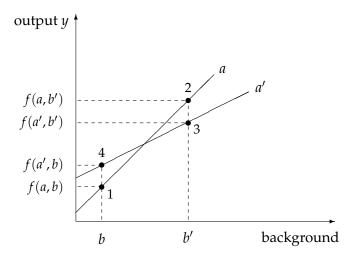
Can we reward schools and avoid pupil selection?

Erwin Ooghe · Erik Schokkaert

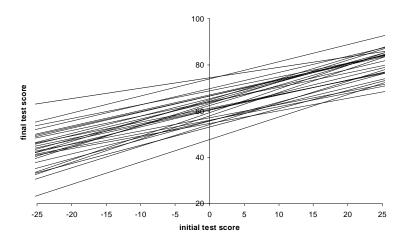
Department of Economics, University of Leuven IZA, Bonn · CORE, UCL



## Mission impossible?



#### Mission impossible!



A benchmark solution:

$$s_{j}^{UO} = { t constant} \, + \, { t slope} \, imes f(a_{j}, b_{j})$$

• A benchmark solution:

$$s_j^{UO} = { t constant} \, + \, { t slope} \, imes f(a_j, b_j)$$

• Two alternative solutions:

$$s_{j}^{RA} = \text{constant} + \text{slope} \times (f(a_{j}, b_{j}) - f(\tilde{a}, b_{j}))$$
  
 $s_{j}^{RB} = \text{constant} + \text{slope} \times f(a_{j}, \tilde{b})$ 

A benchmark solution:

$$s_{j}^{UO} = { t constant} \, + \, { t slope} \, imes f(a_{j}, b_{j})$$

• Two alternative solutions:

$$s_{j}^{RA} = \text{constant} + \text{slope} \times (f(a_{j}, b_{j}) - f(\widetilde{a}, b_{j}))$$
  
 $s_{j}^{RB} = \text{constant} + \text{slope} \times f(a_{j}, \widetilde{b})$ 

•  $s_i^{VA}$  ... is a special case of  $s_i^{RA}$ 

• A benchmark solution:

$$s_{j}^{UO} = ext{constant} + ext{slope} imes f(a_{j}, b_{j})$$

• Two alternative solutions:

$$egin{array}{lll} s_j^{RA} &=& {\tt constant} + {\tt slope} imes (f(a_j,b_j)-f(\widetilde{a},b_j)) \\ s_j^{RB} &=& {\tt constant} + {\tt slope} imes f(a_j,\widetilde{b}) \end{array}$$

- $s_i^{VA}$  ... is a special case of  $s_i^{RA}$
- constant & slope ...

#### Two simulations

incentive	for	good administration						pupil selection					
change	=	$ \left  \begin{array}{c} \Delta \widehat{\boldsymbol{\beta}}_{j,k} = \sigma(\boldsymbol{\beta}_{j,k}) \ \& \ \Delta \widehat{\boldsymbol{v}}_j \ \text{s.t.} \ \Delta \overline{\boldsymbol{y}}_j = 0 \end{array} \right  $						$\Delta \overline{z}_{b,k} = \sigma(\overline{z}_{b,k})$					
measure	=	$\Delta s_i$						$\Delta s_i$					
ideally	=	zero everywhere						zero everywhere					
statistic	=	p10	p50	p90	%<0	%>0	p10	p50	p90	%<0	%>0		
	$\widetilde{\beta}$ low		z	ero eve	erywhere								
RA, with	$\widetilde{\beta}$ mid	zero everywhere											
	$\widetilde{oldsymbol{eta}}$ high		Z	ero eve	erywhere								
VA			ero eve	rywhere									
	$\widetilde{z}$ low							zer	o every	where			
RB, with	$\widetilde{z}$ mid							zero everywhere					
	$\widetilde{z}$ high							zero everywhere					
UO			Z	ero eve	erywhere								

# Incentives for good administration

incentive	for		good	admini	stration	pupil selection						
change	=	$\Delta \hat{\beta}_{i,i}$	$=\sigma(\beta_i)$	.k) & Δ	$\widehat{v}_j$ s.t. $\Delta$	$\Delta \overline{z}_{b,k} = \sigma(\overline{z}_{b,k})$						
measure	=	"	,	$\Delta s_j$		$\Delta s_j$						
ideally	=		zer	o every	where	zero everywhere						
statistic	=	p10	p50	p90	%<0	%>0	p10	p50	p90	%<0	%>0	
	$\tilde{\beta}$ low		zer	o every	where							
RA, with	$\widetilde{\beta}$ mid		zer	o every	where							
	$\widetilde{oldsymbol{eta}}$ high		zei	o every	where							
VA			zer	o every	where							
	$\widetilde{z}$ low	-0.08 -0.05 -0.02 95.9% 4.1% zero ev								rywhere		
RB, with	$\widetilde{z}$ mid	-0.02 0.00 0.03 51.3% 48.7% zero everywhere										
	$\widetilde{z}$ high	0.00	0.03	0.06	5.6%	zero everywhere						
UO			zer	o every	where							

# Incentives for pupil selection

incentive	for		goo	od adm	inistratio	n	pupil selection					
change	=	$\Delta \hat{\beta}_{ij}$	$=\sigma(\beta)$	3. 1.) &	$\Delta \widehat{v}_i$ s.t.	$\Delta \overline{y}_j = 0$	$\Delta \overline{z}_{b,k} = \sigma(\overline{z}_{b,k})$					
measure	=	, J,			$s_i$	J	$\Delta s_i$					
ideally	=		Z	ero eve	erywhere		zero everywhere					
statistic	=	p10	p50	p90	%<0	%>0	p10	p50	p90	%<0	%>0	
	$\widetilde{\beta}$ low		Z	ero eve	erywhere		0.00	0.03	0.07	5.3%	94.7%	
RA, with	$\widetilde{\boldsymbol{\beta}}$ mid		Z	ero eve	erywhere		-0.03	0.00	0.03	50.7%	49.3%	
	$\widetilde{oldsymbol{eta}}$ high		Z	ero eve	erywhere		-0.07	-0.04	0.00	95.4%	4.6%	
VA			Z	ero eve	erywhere		-0.03	0.00	0.03	47.6%	52.4%	
	$\widetilde{z}$ low						zero everywhere					
RB, with	$\widetilde{z}$ mid						zero everywhere					
	$\widetilde{z}$ high						zero everywhere					
UO			Z	ero eve	erywhere		0.11	0.14	0.17	0%	100%	