Measuring the efficiency of public expenditure in Argentine provinces

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Topics to analyse

- Measuring the efficiency of the Public Sector
- Social and economic context
- Application
- Conclusions

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Measuring the efficiency of the Public Sector

Public Sector realises activities that can't be buy in markets (not desirable)

Public activities efficiency is essential for development of countries

- Public sector draws resources from society (distorts resources allocation)

It’s difficult to design an aggregate production function of the public sector

- Input problems: Difficult to determine optimal level of inputs for produce a particular result, there aren’t incentives to workers to be efficient (not paid by productivity).
- Output problems: Social demands are complex, multiple and not clearly defined

Measuring the efficiency of the Public Sector

Construction of an efficiency frontiers using *Benchmarking* is a common measurement efficiency technique applied to PS.

Benchmarking: Compare unit's output relative to input.

Afonso et al (2006) made an international comparison about expenditure efficiency (EU & emerging markets)

Moskovits y Cao (2012) researched this topic applied to argentine provinces

Epele et al (2013) researched education efficiency in argentine provinces

Measuring the efficiency of the Public Sector

DEA (*Data Envelopment Analysis)* is a non-parametric estimation technique of efficiency frontiers, based on the solution of a linear programming problem.

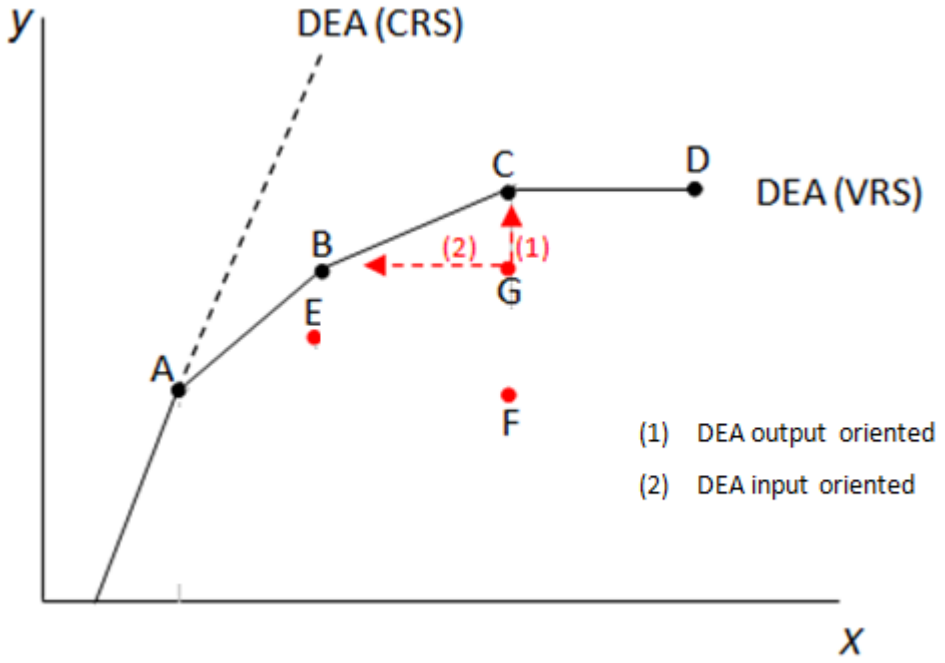
This technique provides an homogeneous framework to **detect** units with the **best practices**.

Previous aspects (about the LPP):

Orientation: **input** (proportional reduction of inputs holding the output level unchanged), output (proportional expansion of output holding the input level unchanged), directional

Class of returns to scale: **CRS, VRS**,…

Measuring the efficiency of the Public Sector



DEA (CRS)

$$\min_{\theta,\lambda} \theta$$

Subject to:

$$-y_i + Y\lambda \geq 0$$

$$\theta x_i - X\lambda \geq 0$$

$$\lambda \geq 0$$

DEA (VRS)

$$\min_{\theta,\lambda} \theta$$

Subject to:

$$-y_i + Y\lambda \geq 0$$

$$\theta x_i - X\lambda \geq 0$$

$$n1'\lambda = 1$$

$$\lambda \geq 0$$

Θ is the relative efficiency.

1-Θ is the proportional distance to the frontier (reduction/expansion coefficient)

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Social and economic context

Argentinian provinces have assigned the biggest part of Social Public Expenditure, Education, Health, Basic Infrastructure, Safety, as a result of expenditure decentralization

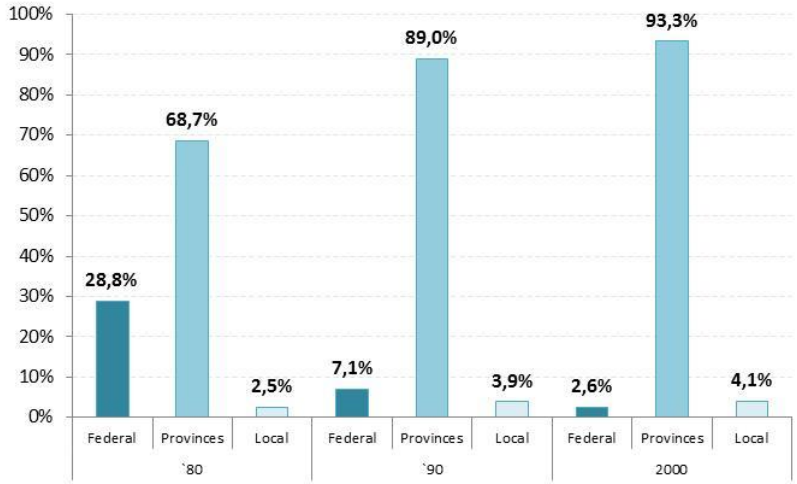
They must follow policy guidelines but they have freedom to design programs and to assign resources

Provincial governments have similar objectives about the previous variables

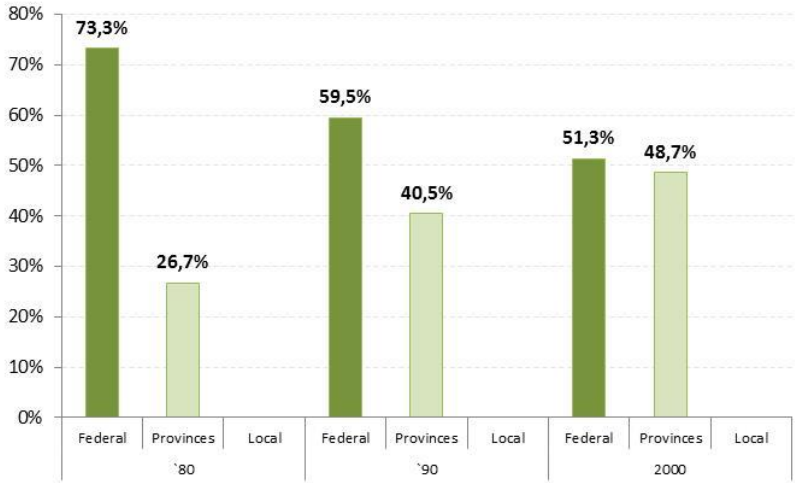
Observed differences between provinces is the result, among other aspects, of differences in productive process (implemented politics)

Social and economic context

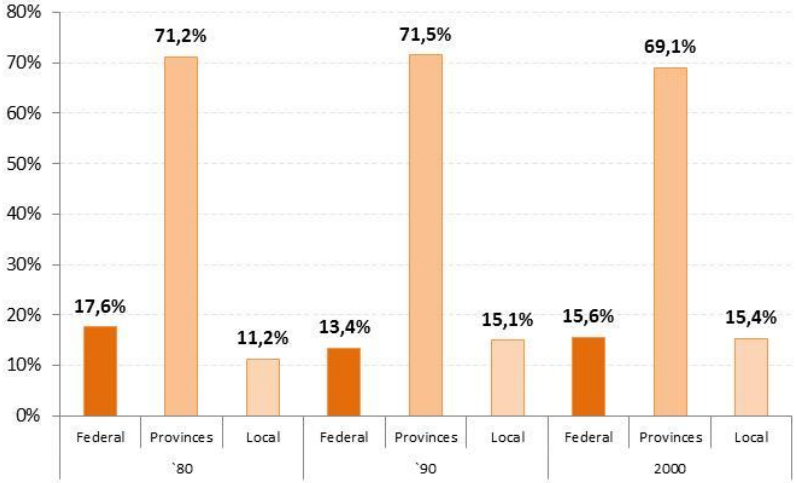
Basic Education



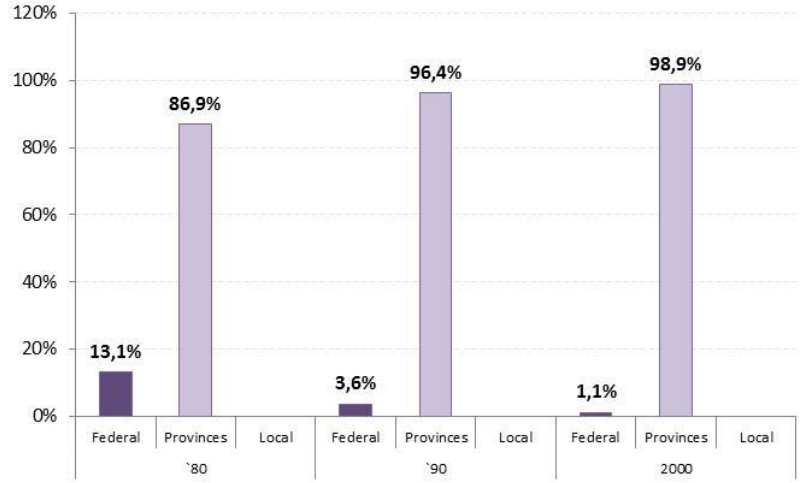
Safety



Basic Health



Housing and urbanism



Social and economic context: Health

Province	2003			2013			Evolution		
	Child mortality rate ‰	Gross mortality rate ‰	Matern mortality ‰	Child mortality rate ‰	Gross mortality rate ‰	Matern mortality ‰	Child mortality rate ‰	Gross mortality rate ‰	Matern mortality ‰
Buenos Aires	16,30	8,10	2,70	11,00	8,20	3,00	-5,30	0,10	0,30
CABA	10,30	11,20	0,70	8,90	10,60	1,60	-1,40	-0,60	0,90
Catamarca	20,10	5,30	6,90	9,70	6,10	1,50	-10,40	0,80	-5,40
Chaco	14,30	7,90	2,50	11,60	6,50	4,90	-2,70	-1,40	2,40
Chubut	21,10	6,00	9,60	9,30	5,70	4,00	-11,80	-0,30	-5,60
Córdoba	27,70	6,10	5,20	9,60	8,20	2,30	-18,10	2,10	-2,90
Corrientes	15,10	5,80	2,30	14,90	6,60	7,50	-0,20	0,80	5,20
Entre Ríos	17,20	7,50	4,10	9,20	7,80	2,70	-8,00	0,30	-1,40
Formosa	25,00	5,60	16,40	14,20	6,20	9,20	-10,80	0,60	-7,20
Jujuy	19,10	5,40	8,50	11,80	6,00	0,80	-7,30	0,60	-7,70
La Pampa	12,70	7,10	1,80	9,90	7,70	3,50	-2,80	0,60	1,70
La Rioja	17,30	5,30	15,00	12,00	5,80	11,20	-5,30	0,50	-3,80
Mendoza	11,10	6,80	4,80	8,50	7,10	3,50	-2,60	0,30	-1,30
Misiones	20,20	5,30	6,80	10,40	5,70	4,70	-9,80	0,40	-2,10
Neuquén	10,80	4,40	5,80	10,30	4,90	1,80	-0,50	0,50	-4,00
Río Negro	15,90	5,40	1,80	11,40	6,10	3,30	-4,50	0,70	1,50
Salta	16,90	5,20	5,70	14,10	5,80	5,10	-2,80	0,60	-0,60
San Juan	19,60	6,50	3,50	12,30	6,70	5,40	-7,30	0,20	1,90
San Luis	17,40	6,10	2,50	8,60	6,60	2,60	-8,80	0,50	0,10
Santa Cruz	15,50	5,20	2,00	9,50	4,60	5,00	-6,00	-0,60	3,00
Santa Fe	13,90	8,60	3,10	9,80	8,90	2,80	-4,10	0,30	-0,30
Santiago del Estero	14,20	5,60	5,70	11,50	6,10	2,30	-2,70	0,50	-3,40
Tierra del Fuego	8,40	3,50	8,40	7,70	3,30	11,80	-0,70	-0,20	3,40
Tucumán	23,00	6,00	3,50	13,10	6,40	1,70	-9,90	0,40	-1,80

Social and economic context: Basic Infrastructure

Province	2003		2013		Evolution	
	Housing deficit	Safe water access (%)	Housing deficit	Safe water access (%)	Housing deficit	Safe water access (p.p.)
Buenos Aires	96.060	76,75	90.182	81,66	- 5.878	4,9
CABA	48.722	99,70	595.526	99,33	546.804	- 0,4
Catamarca	2.438	99,81	11.932	99,61	9.494	- 0,2
Chaco	5.508	100,00	902	92,74	- 4.606	- 7,3
Chubut	4.231	99,73	7.508	99,75	3.277	0,0
Córdoba	28.262	99,72	26.937	97,48	- 1.325	- 2,2
Corrientes	7.013	99,69	8.188	99,39	1.175	- 0,3
Entre Ríos	4.245	99,64	4.531	99,47	286	- 0,2
Formosa	1.177	99,79	1.289	97,59	112	- 2,2
Jujuy	5.485	99,82	2.907	97,12	- 2.578	- 2,7
La Pampa	3.087	96,95	505	97,22	- 2.582	0,3
La Rioja	4.199	100,00	15.775	99,63	11.576	- 0,4
Mendoza	14.691	98,82	13.278	99,52	- 1.413	0,7
Misiones	4.523	90,25	14.408	93,45	9.885	3,2
Neuquén	3.452	99,84	7.192	99,50	3.740	- 0,3
Río Negro	1.231	99,59	1.059	98,56	- 172	- 1,0
Salta	10.759	99,29	10.337	97,89	- 422	- 1,4
San Juan	4.757	99,16	23.147	96,81	18.390	- 2,3
San Luis	1.846	100,00	2.725	99,83	879	- 0,2
Santa Cruz	2.999	100,00	5.150	97,70	2.151	- 2,3
Santa Fe	21.451	98,38	14.973	92,63	- 6.478	- 5,8
Santiago del Estero	3.003	99,65	2.116	96,80	- 887	- 2,9
Tierra del Fuego	2.555	100,00	2.240	94,43	- 315	- 5,6
Tucumán	13.217	99,07	49.985	99,49	36.768	0,4

Social and economic context : Safety

Province	2003	2008	Evolution
	Crime rate	Crime rate	Crime rate
Buenos Aires	1.967	1.491	- 476
CABA	-	-	-
Catamarca	3.615	1.966	- 1.649
Chaco	3.398	2.194	- 1.204
Chubut	2.926	2.355	- 572
Córdoba	3.839	3.821	- 17
Corrientes	2.922	2.100	- 822
Entre Ríos	1.890	1.859	- 31
Formosa	2.308	1.913	- 395
Jujuy	3.213	3.282	69
La Pampa	3.812	2.787	- 1.024
La Rioja	2.667	1.805	- 862
Mendoza	5.458	5.403	- 54
Misiones	2.192	1.755	- 438
Neuquén	5.931	5.502	- 429
Río Negro	2.970	3.167	197
Salta	2.596	3.650	1.054
San Juan	4.217	3.348	- 868
San Luis	2.501	2.765	264
Santa Cruz	4.467	3.744	- 723
Santa Fe	2.960	3.359	399
Santiago del Estero	2.121	1.743	- 377
Tierra del Fuego	2.832	2.984	152
Tucumán	1.960	1.911	- 49

Social and economic context: Education (1)

Province	2003								
	Literacy rate	Primary Level				Elementary Cicle			
		Grade repetition rate	Scholar dropout rate	Scholar overage rate	Pupil per teacher	Grade repetition rate	Scholar dropout rate	Scholar overage rate	Pupil per teacher
Buenos Aires	98,42	5,17	1,35	15,58	16,65	8,68	7,46	25,35	31,55
CABA	99,55	2,35	-0,08	11,13	12,31	8,27	3,77	24,97	14,90
Catamarca	97,07	5,72	2,31	29,28	12,53	4,90	7,20	39,08	18,69
Chaco	92,02	8,38	3,61	32,34	18,58	12,09	10,16	32,24	33,41
Chubut	96,92	7,19	0,84	22,62	16,91	7,94	9,28	45,99	33,11
Córdoba	97,89	4,05	0,75	19,25	18,02	9,22	11,50	39,32	28,51
Corrientes	93,52	11,96	4,41	38,07	14,15	12,44	5,65	38,60	16,68
Entre Ríos	96,92	9,02	1,96	28,30	13,16	11,07	9,32	38,73	27,41
Formosa	94,02	10,79	4,16	37,75	16,80	8,23	10,49	46,59	28,92
Jujuy	95,26	5,68	0,94	20,90	13,62	9,86	11,47	44,00	20,41
La Pampa	97,31	5,29	0,58	18,34	11,87	9,34	8,01	29,02	19,12
La Rioja	97,53	8,07	2,96	28,84	14,62	9,01	9,91	43,03	24,81
Mendoza	96,79	7,55	1,26	21,94	16,82	11,39	8,90	31,47	26,48
Misiones	93,82	10,93	5,51	42,61	18,79	10,86	12,91	45,52	21,73
Neuquén	96,59	6,42	0,61	25,02	13,62	13,66	9,01	43,25	18,33
Río Negro	96,23	7,16	0,94	25,47	11,27	13,62	12,40	40,51	22,88
Salta	95,34	6,80	2,01	27,42	16,69	7,93	7,13	41,93	37,57
San Juan	97,05	8,07	3,46	40,97	16,05	10,06	10,58	48,86	20,84
San Luis	97,05	9,44	3,26	31,98	14,81	8,45	9,82	40,11	12,37
Santa Cruz	98,56	11,25	0,03	24,38	11,74	18,32	9,82	39,66	15,80
Santa Fe	97,54	6,29	1,39	22,65	14,20	8,84	7,08	32,41	25,27
Santiago del Estero	93,96	11,29	4,52	36,07	17,89	6,68	17,70	37,45	28,74
Tierra del Fuego	99,33	2,74	0,51	10,73	14,19	12,12	6,30	29,08	19,84
Tucumán	96,38	6,57	1,45	25,19	13,65	6,49	7,69	27,74	28,13

Social and economic context: Education (2)

Province	2013								
	Literacy rate	Primary Level				Elementary Cicle			
		Grade repetition rate	Scholar dropout rate	Scholar overage rate	Pupil per teacher	Grade repetition rate	Scholar dropout rate	Scholar overage rate	Pupil per teacher
Buenos Aires	99,05	2,46	0,35	12,74	17,73	12,42	8,08	37,68	25,51
CABA	99,91	1,64	0,53	9,65	8,85	9,57	5,23	27,16	13,40
Catamarca	99,37	1,42	1,10	18,97	8,42	7,07	2,03	37,88	18,42
Chaco	99,32	2,61	2,50	24,97	12,56	9,67	9,36	34,30	25,21
Chubut	98,99	1,34	0,08	15,77	11,47	13,47	6,54	44,81	15,16
Córdoba	99,89	1,98	0,48	14,14	13,94	11,67	9,05	34,01	23,53
Corrientes	98,67	9,93	2,51	43,02	13,90	7,79	10,10	51,22	18,17
Entre Ríos	98,25	3,98	1,02	20,08	11,00	16,86	10,28	43,84	22,93
Formosa	98,42	3,09	2,60	32,88	11,96	12,25	10,96	46,56	20,73
Jujuy	98,78	0,78	0,19	12,39	9,24	7,35	9,33	31,40	26,35
La Pampa	99,61	0,66	0,12	15,35	9,29	12,21	5,97	38,81	17,28
La Rioja	99,21	3,56	1,12	23,22	9,01	3,03	4,75	39,98	27,98
Mendoza	99,36	3,83	0,83	16,27	12,15	9,48	10,45	32,76	24,61
Misiones	98,78	4,41	3,24	28,56	14,73	8,12	9,45	40,17	31,83
Neuquén	98,29	3,42	-0,29	18,52	9,03	17,69	9,63	41,15	16,20
Río Negro	98,64	1,17	0,16	15,12	7,85	12,66	8,59	38,22	12,59
Salta	98,78	3,51	2,02	24,71	10,91	10,55	7,42	43,27	39,95
San Juan	99,14	4,55	1,59	27,59	13,88	15,37	10,61	49,42	22,55
San Luis	98,71	3,04	3,38	26,66	12,06	8,53	7,40	43,95	10,68
Santa Cruz	99,49	0,43	-0,38	15,79	10,89	11,03	6,16	46,56	14,44
Santa Fe	99,10	2,73	1,15	16,15	12,13	11,55	10,98	34,94	31,58
Santiago del Estero	98,76	5,63	3,25	33,74	12,25	8,96	12,90	43,54	9,02
Tierra del Fuego	99,66	1,44	-1,49	12,93	10,69	13,32	4,58	46,72	11,07
Tucumán	98,12	0,98	0,51	10,77	10,92	10,09	9,66	29,22	24,72

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Application

24 provinces have been evaluated jointly.

Areas: Infrastructure, Health, Education, Safety.

Orientation input: It has been evaluated utilization of resources relative to results. (Input: functional expenditure in Health, Education, Safety and Housing and community amenities – Provincial inversion accounts)

Scale returns: It has been evaluated **CRS** y **VRS**, to detect any scale return pattern in provinces

Application

Provinces which have better score are more efficiently and have been developed politics that shall be imitated (ceteris paribus).

To observe changes, efficiency is measured in two moments.

Application: Health

Province	2003		2013		Evolution	
	DEA - CRS	DEA - VRS	DEA - CRS	DEA - VRS	DEA - CRS	DEA - VRS
Buenos Aires	30%	33%	41%	48%	10,70	15,13
CABA	100%	100%	100%	100%	0,00	0,00
Catamarca	43%	44%	68%	77%	25,01	32,77
Chaco	72%	72%	62%	65%	-10,00	-6,59
Chubut	34%	37%	44%	55%	10,83	18,12
Córdoba	72%	82%	100%	100%	27,52	18,26
Corrientes	100%	100%	81%	87%	-19,38	-12,88
Entre Ríos	58%	66%	62%	64%	4,80	-2,11
Formosa	55%	58%	48%	52%	-7,03	-5,90
Jujuy	61%	61%	100%	100%	39,01	38,93
La Pampa	42%	39%	38%	43%	-3,96	4,06
La Rioja	35%	42%	63%	64%	28,06	21,77
Mendoza	100%	100%	100%	100%	0,00	0,00
Misiones	100%	100%	100%	100%	0,00	0,00
Neuquén	29%	66%	48%	68%	18,92	1,49
Río Negro	56%	100%	53%	55%	-3,05	-44,69
Salta	61%	58%	73%	74%	12,75	15,64
San Juan	44%	51%	68%	74%	23,83	22,70
San Luis	46%	48%	86%	100%	40,52	51,86
Santa Cruz	19%	42%	28%	44%	8,62	2,33
Santa Fe	88%	95%	75%	84%	-13,26	-11,06
Santiago del Estero	70%	69%	93%	100%	23,83	30,99
Tierra del Fuego	32%	100%	45%	100%	13,29	0,00
Tucumán	79%	84%	73%	73%	-5,52	-10,26
Mean	**59,4%**	**68,6%**	**68,7%**	**76,1%**	**9,39**	**7,52**
Standard Deviation	**25,22**	**24,02**	**22,63**	**20,49**	**-10,3%**	**-14,7%**
Coefficient of variation	**0,42**	**0,35**	**0,33**	**0,27**	**-0,10**	**-0,08**

Application: Basic Infrastructure

Province	2003		2013		Evolution	
	DEA - CRS	DEA - VRS	DEA - CRS	DEA - VRS	DEA - CRS	DEA - VRS
Buenos Aires	69%	88%	100%	100%	31,37	11,98
CABA	100%	100%	100%	100%	0,00	0,00
Catamarca	63%	85%	47%	100%	-16,25	14,53
Chaco	100%	100%	74%	87%	-25,66	-12,57
Chubut	42%	56%	58%	100%	16,24	44,36
Córdoba	92%	100%	67%	100%	-24,42	0,00
Corrientes	34%	49%	58%	100%	24,09	51,30
Entre Ríos	89%	100%	77%	100%	-12,09	0,00
Formosa	100%	100%	82%	77%	-18,47	-23,14
Jujuy	62%	100%	100%	48%	37,71	-52,47
La Pampa	16%	16%	24%	100%	8,14	83,78
La Rioja	43%	100%	67%	83%	24,76	-16,93
Mendoza	51%	61%	68%	100%	17,49	38,96
Misiones	34%	35%	39%	29%	5,49	-6,32
Neuquén	51%	78%	36%	88%	-14,68	10,22
Río Negro	100%	100%	100%	100%	0,00	0,00
Salta	55%	72%	60%	40%	4,71	-31,90
San Juan	40%	44%	52%	29%	12,05	-14,87
San Luis	26%	100%	23%	100%	-3,50	0,00
Santa Cruz	38%	100%	20%	93%	-17,83	-6,94
Santa Fe	100%	100%	100%	81%	0,00	-18,82
Santiago del Estero	47%	50%	46%	62%	-0,63	12,00
Tierra del Fuego	24%	75%	39%	100%	14,94	25,35
Tucumán	42%	52%	40%	49%	-1,19	-3,35
Mean	**59,0%**	**77,6%**	**61,6%**	**82,0%**	**2,60**	**4,38**
Standard Deviation	**27,87**	**25,88**	**26,04**	**24,81**	**-6,6%**	**-4,2%**
Coefficient of variation	**0,47**	**0,33**	**0,42**	**0,30**	**-0,05**	**-0,03**

Application: Education

Province	2003		2013		Evolution	
	DEA - CRS	DEA - VRS	DEA - CRS	DEA - VRS	DEA - CRS	DEA - VRS
Buenos Aires	100%	100%	100%	100%	0,00	0,00
CABA	100%	100%	100%	100%	0,00	0,00
Catamarca	100%	100%	100%	100%	0,00	0,00
Chaco	84%	88%	87%	87%	2,52	-1,17
Chubut	93%	93%	100%	100%	7,14	6,94
Córdoba	93%	93%	100%	100%	6,86	7,15
Corrientes	100%	100%	80%	80%	-20,38	-20,38
Entre Ríos	100%	100%	93%	93%	-7,26	-6,57
Formosa	100%	100%	100%	100%	0,00	0,00
Jujuy	86%	87%	100%	100%	14,28	13,46
La Pampa	100%	100%	100%	100%	0,00	0,00
La Rioja	73%	72%	100%	100%	27,37	27,81
Mendoza	87%	88%	95%	95%	7,41	7,03
Misiones	100%	100%	100%	100%	0,00	0,00
Neuquén	87%	88%	100%	100%	12,82	12,48
Río Negro	100%	100%	99%	100%	-0,94	0,00
Salta	100%	100%	100%	100%	0,00	0,00
San Juan	83%	83%	86%	86%	2,79	2,34
San Luis	100%	100%	100%	100%	0,00	0,00
Santa Cruz	100%	100%	100%	100%	0,00	0,00
Santa Fe	93%	93%	84%	84%	-9,55	-8,93
Santiago del Estero	82%	82%	100%	100%	18,35	17,77
Tierra del Fuego	100%	100%	100%	100%	0,00	0,00
Tucumán	100%	100%	100%	100%	0,00	0,00
Mean	**94,2%**	**94,4%**	**96,8%**	**96,9%**	**2,56**	**2,41**
Standard Deviation	**8,06**	**7,81**	**6,24**	**6,18**	**-22,6%**	**-20,8%**
Coefficient of variation	**0,09**	**0,08**	**0,06**	**0,06**	**-0,02**	**-0,15**

Application: Safety

Province	2003		2008		Evolution	
	DEA - CRS	DEA - VRS	DEA - CRS	DEA - VRS	DEA - CRS	DEA - VRS
Buenos Aires	38%	68%	33%	58%	-5,03	-9,23
CABA	NA	NA	NA	NA	NA	NA
Catamarca	58%	67%	31%	44%	-27,06	-23,04
Chaco	71%	87%	45%	61%	-26,08	-26,52
Chubut	62%	82%	68%	88%	5,71	6,05
Córdoba	90%	100%	95%	100%	5,09	0,00
Corrientes	30%	44%	25%	48%	-5,72	4,29
Entre Ríos	33%	62%	31%	45%	-2,21	-16,35
Formosa	39%	54%	41%	59%	2,31	5,03
Jujuy	73%	90%	74%	82%	0,68	-8,11
La Pampa	57%	64%	38%	45%	-19,75	-19,09
La Rioja	30%	47%	31%	46%	0,77	-1,07
Mendoza	100%	100%	100%	100%	0,00	0,00
Misiones	63%	100%	66%	100%	3,82	0,00
Neuquén	48%	100%	46%	100%	-1,56	0,00
Río Negro	46%	59%	50%	59%	4,77	-0,02
Salta	64%	91%	92%	99%	28,24	7,84
San Juan	93%	100%	90%	100%	-2,39	0,00
San Luis	60%	87%	55%	66%	-4,56	-20,80
Santa Cruz	26%	27%	22%	27%	-3,87	0,21
Santa Fe	56%	74%	70%	78%	13,89	3,73
Santiago del Estero	48%	79%	41%	63%	-6,70	-16,68
Tierra del Fuego	14%	19%	21%	27%	6,95	8,08
Tucumán	50%	89%	57%	82%	7,36	-6,90
Mean	**54,3%**	**73,5%**	**53,2%**	**68,6%**	**-1,10**	**-4,90**
Standard Deviation	**21,80**	**23,74**	**24,61**	**24,43**	**12,9%**	**2,9%**
Coefficient of variation	**0,40**	**0,32**	**0,46**	**0,36**	**0,06**	**0,03**

- Measuring the efficiency of the Public Sector
- Social and economic context
- Application
- Conclusions

Conclusions

Province	2003		2013		Evolution
	Agregate Efficiency	Position	Agregate Efficiency	Position	
CABA	100,0%	1	100,0%	1	0
Córdoba	93,6%	2	100,0%	2	0
Mendoza	87,2%	5	98,7%	3	2
San Luis	83,7%	9	91,5%	4	5
Neuquén	83,0%	10	89,1%	5	5
Chubut	66,9%	22	85,8%	6	16
Jujuy	84,4%	7	82,4%	7	0
Misiones	83,8%	8	82,3%	8	0
Santa Fe	90,5%	3	81,8%	9	-6
Tierra del Fuego	73,3%	16	81,7%	10	6
Santiago del Estero	70,2%	19	81,2%	11	8
Catamarca	74,0%	15	80,1%	12	3
Corrientes	73,2%	17	78,8%	13	4
Río Negro	89,8%	4	78,7%	14	-10
Salta	80,3%	13	78,2%	15	-2
Buenos Aires	72,1%	18	76,6%	16	2
Tucumán	81,3%	12	76,1%	17	-5
Entre Ríos	81,9%	11	75,6%	18	-7
Chaco	86,7%	6	75,0%	19	-13
La Rioja	65,3%	23	73,2%	20	3
San Juan	69,6%	20	72,2%	21	-1
Formosa	78,0%	14	72,0%	22	-8
La Pampa	54,7%	24	71,9%	23	1
Santa Cruz	67,2%	21	66,1%	24	-3
Mean	78,8%		81,2%		2,41
Standard Deviation	10,43		9,07		**-13,1%**
Coefficient of variation	0,13		0,11		**-2,1%**

Conclusions

CABA, Córdoba, Mendoza y San Luis would be the most efficient provinces.

Future research:

- Analyse and detect the principal programs implemented by the provinces in each area.
- Exogenous factor analysis: Federal gov. politics, PGP, historic and cultural factors, demographic factors, income distribution, fiscal transparency.

Measuring the efficiency of public expenditure in Argentine provinces

Thanks!