

Human Capital and Economic Development

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Comments on *“Educación Técnica y Formación
Profesional en América Latina”*

January, 2015

In a nutshell:

The friendly me:

- The text presents a comprehensive discussion of the main issues regarding technical education in the region.
- It complements the literature with relevant facts/statistics/cases from LAC.

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- What are the economic messages from new findings?
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The nasty me:

- It is time to go beyond commonplace assertions...
...seriously!

LACs have been roaming around

(Bassi, Rucci & Urzúa, 2014)

- Heterogeneous countries over-emphasizing “coverage” relative to “quality”.
- Countries have not seriously considered that education is a **continuous process**. It does not end with a degree.
- Schooling system is in general **disconnected** from labor market (skills).
- It is critical to re-direct the efforts: Improving transition from school to work.
- A precise conceptualization is needed: Implications for institutions.
- **Key players: Public & Private Sectors (Institutions?)**

There is no one single bullet: LACs
must find their own paths
(institutions, funding, evaluation and
continuous monitoring, systemic
perspective)

“Without structural reforms, LACs will not
be able to boost productivity, sacrificing
future social and economic development”
(Bassi, Rucci & Urzúa, 2014)

Where are LACs?

Public expenditure has increased over time:

Cuadro 1: Gasto público en educación en todos los niveles, total (% del PIB).
Promedios por década.

País	1970-1979	1980-1989	1990-1999	2000-2009
LAC			3.87	4.14
Argentina	1.80	1.67	3.34	4.62
Bolivia			5.25	6.06
Brasil		4.73	4.44	4.59
Chile	3.64	4.22	2.91	3.76
Colombia	1.75	2.55	4.18	4.11
Costa Rica		4.32	4.22	4.98
Rep. Dominicana	2.64	1.47	0.99	1.99
Ecuador			2.29	2.40
El Salvador	0.90		2.22	2.94
Guatemala	1.84		1.57	3.00
Honduras	3.20	2.99	3.49	
México		2.27	3.67	5.02
Nicaragua	2.45	4.60	3.22	4.02
Panamá	5.12	4.26	4.45	4.31
Paraguay	2.19	1.45	3.73	4.57
Perú	3.48		3.21	2.78
Uruguay	1.99	2.55	2.46	2.53
Venezuela	4.05	4.33	4.03	3.65
OECD			12.80	12.35
Portugal			12.77	11.81
República Checa			9.70	9.64

FUENTE: Banco Mundial.

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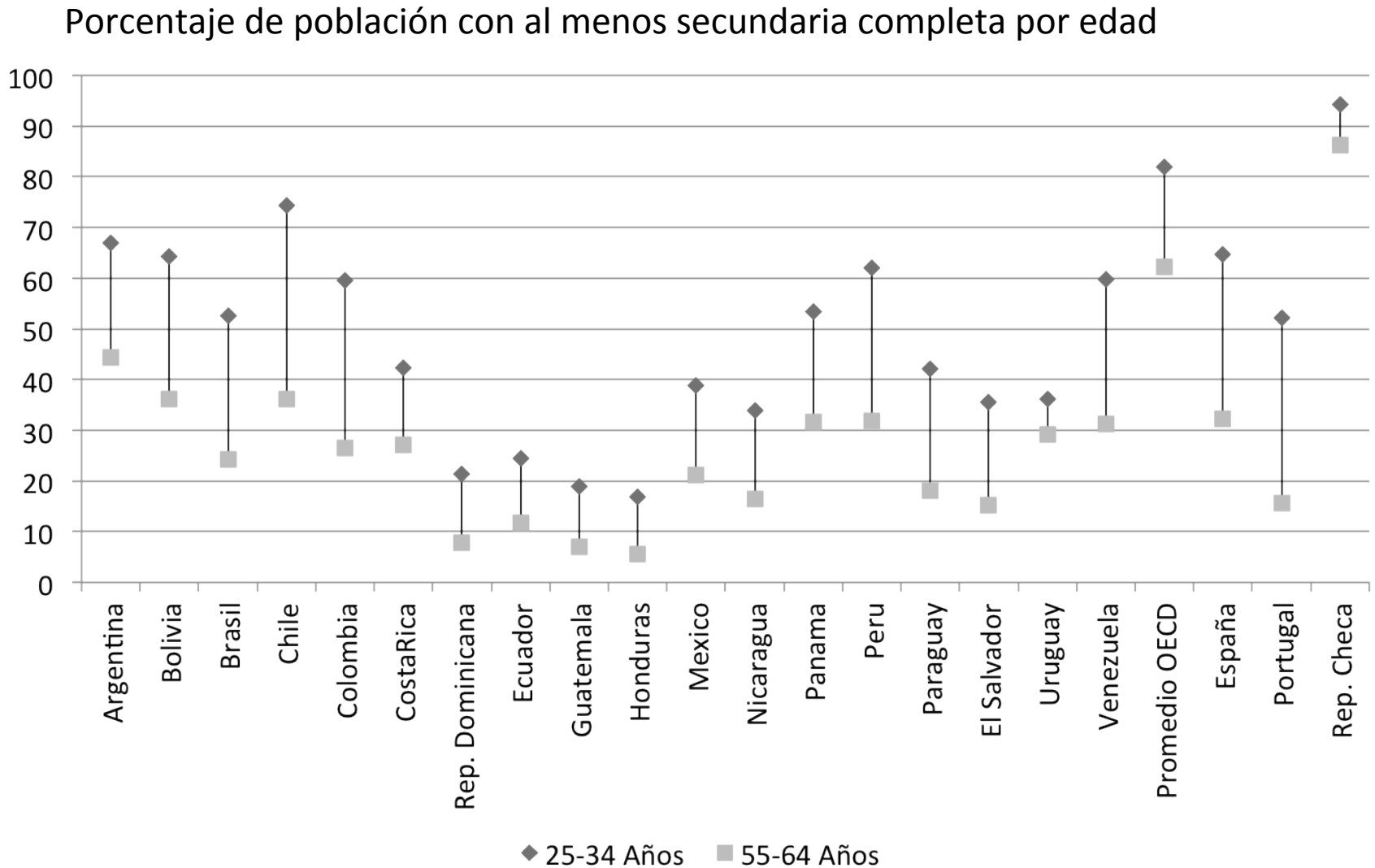
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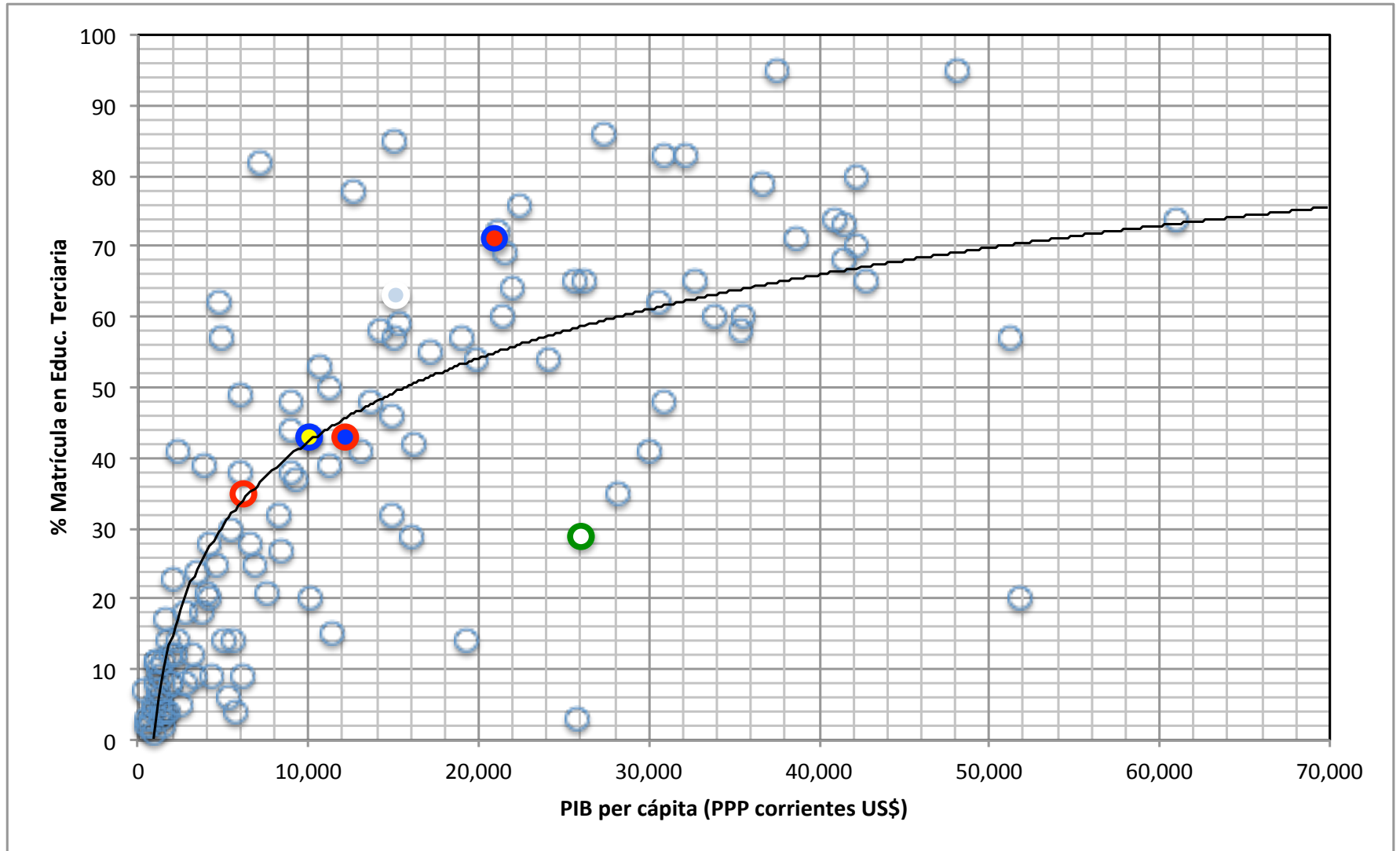
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Different realities within countries:

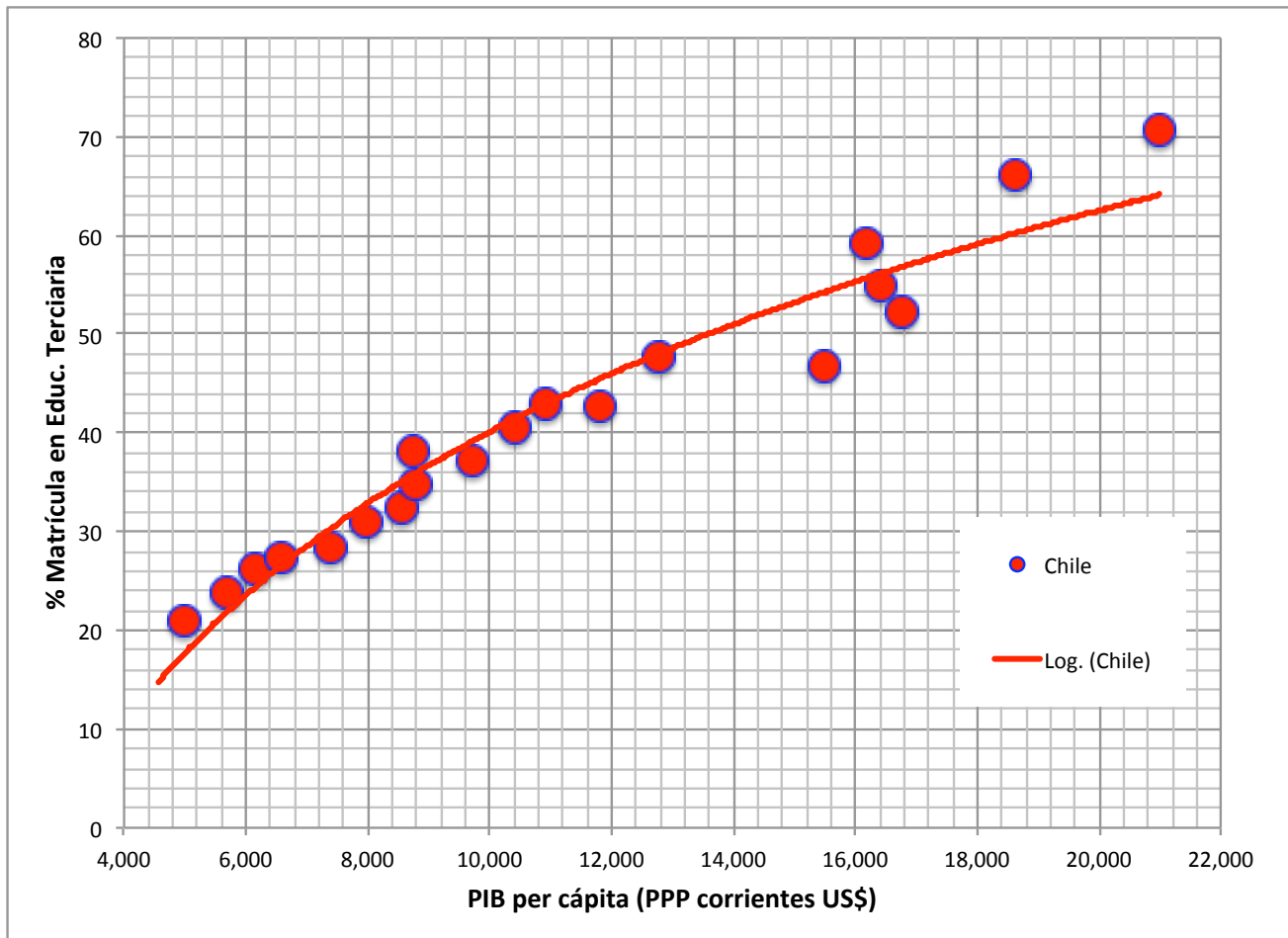


Per-capita income and Post-secondary enrollment



Fuente: Gonzalez, Rucci y Urzua (2013)

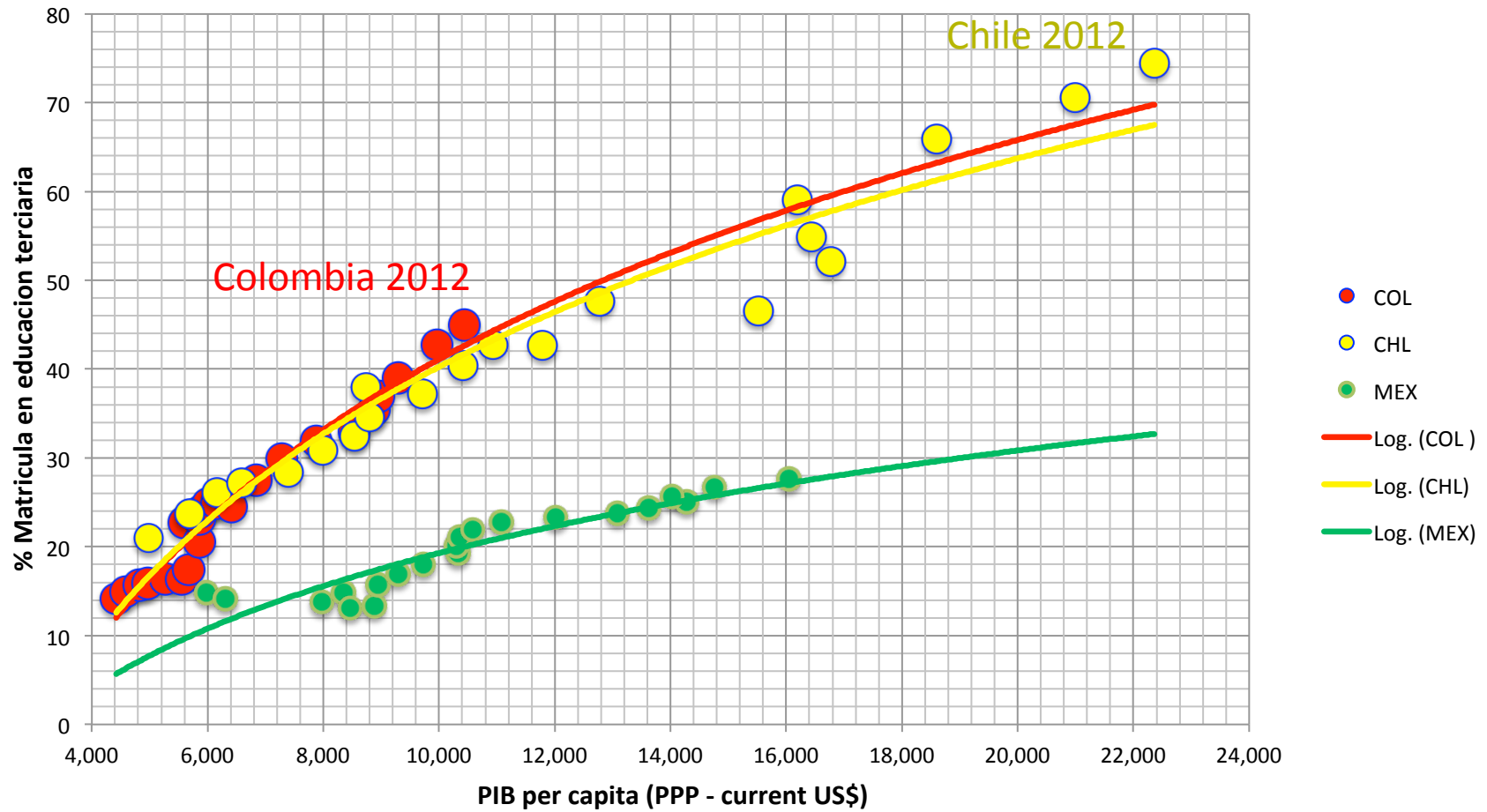
Chile: 1990 - 2013



Fuente: González-Velosa, Sarzosa, Rucci y Urzua (2013)

Many countries catching up...

Enrollment rates versus GDP: 1990-2012

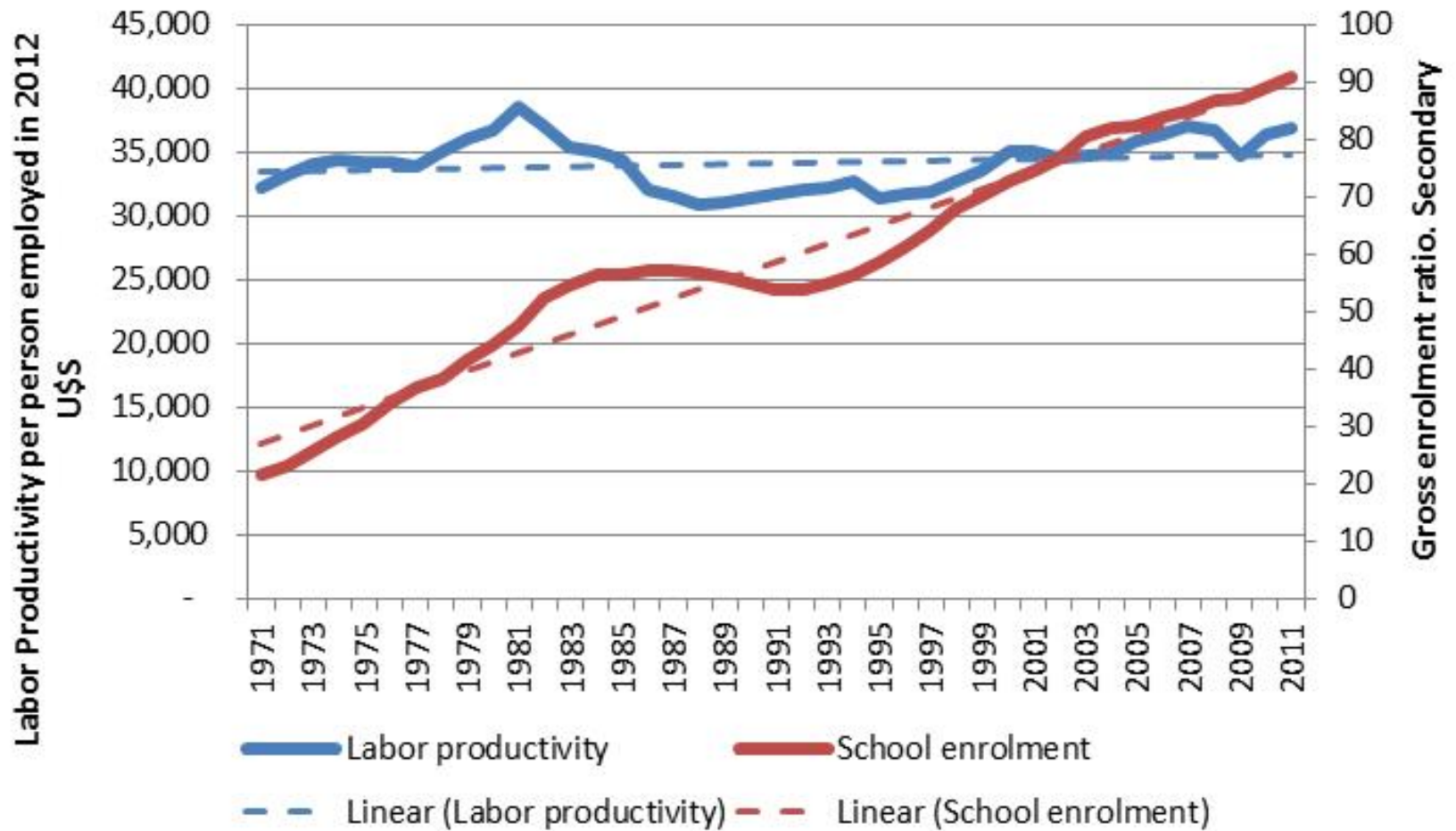


Source: World Bank and UNESCO Institute for Statistics (World Education Indicators Programme)

Fuente: González-Velosa, Sarzosa, Rucci y Urzua (2013)

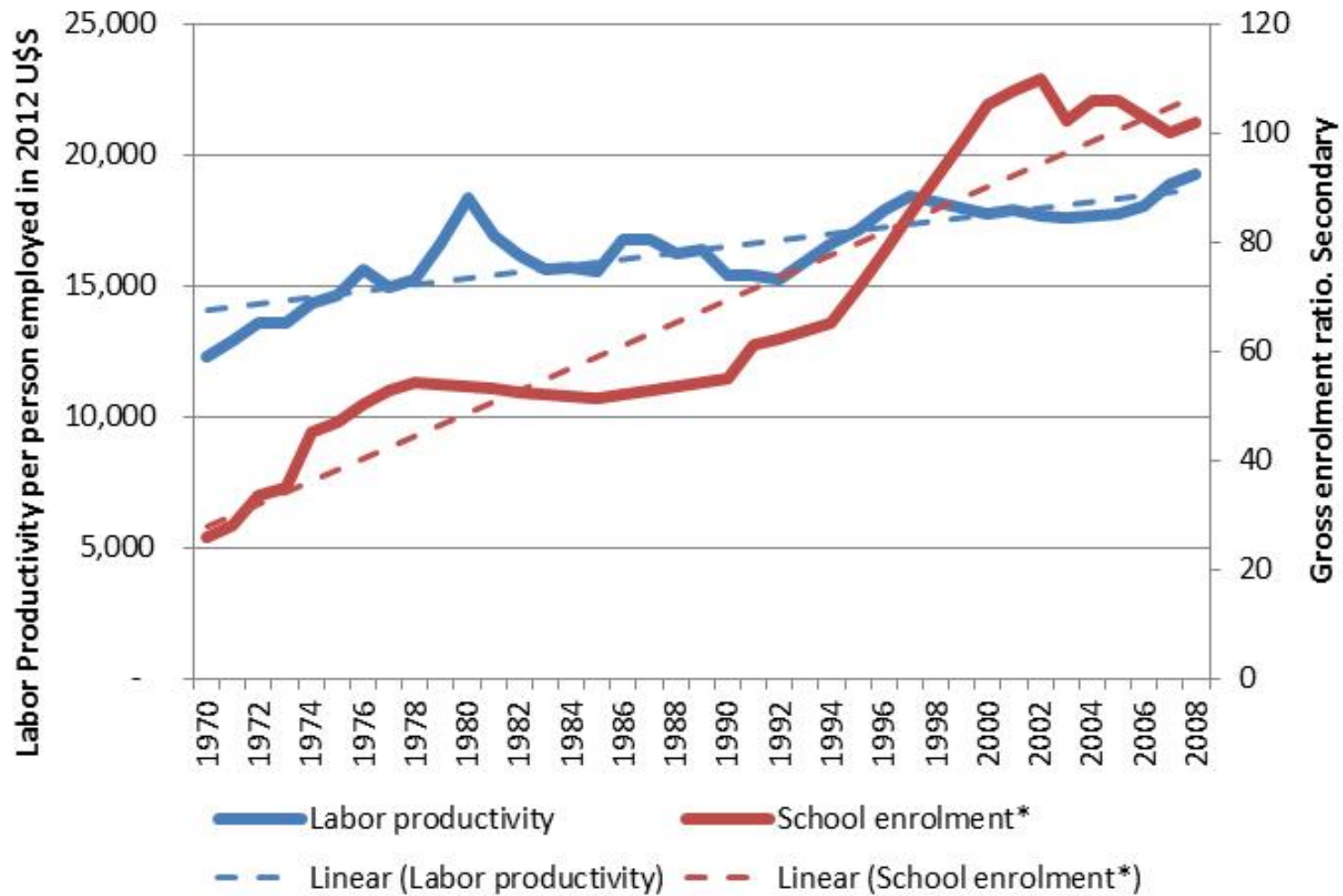
But these efforts did
not translate into
higher productivity
levels

MEXICO



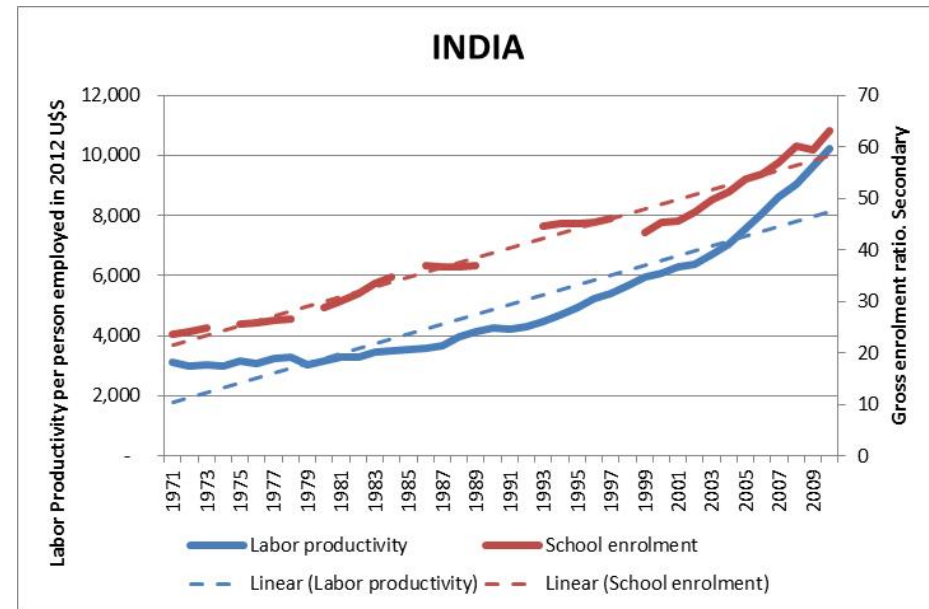
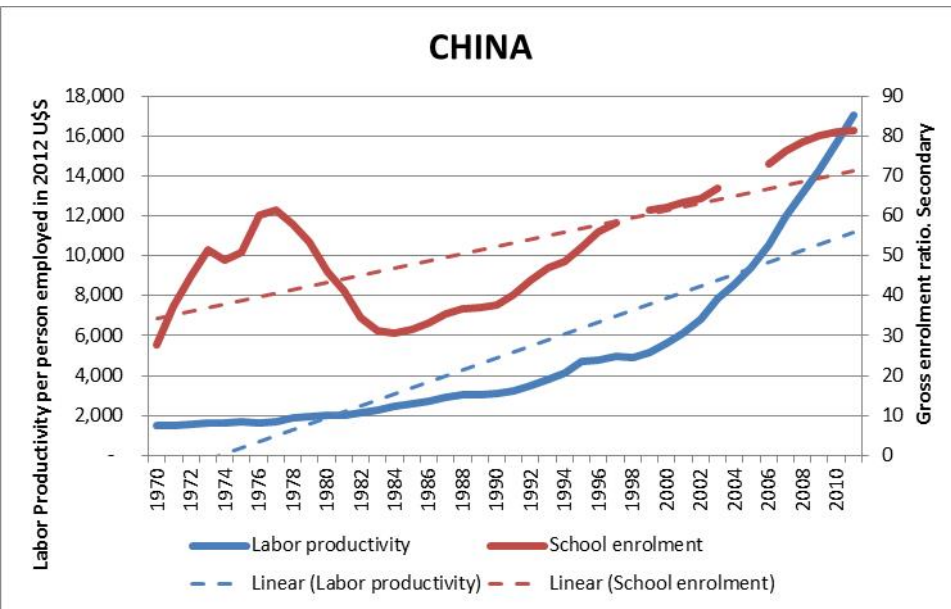
Fuente: Bassi, Rucci y Urzua, 2013.

BRAZIL



Fuente: Bassi, Rucci y Urzua, 2013.

Is it possible? Absolutely!



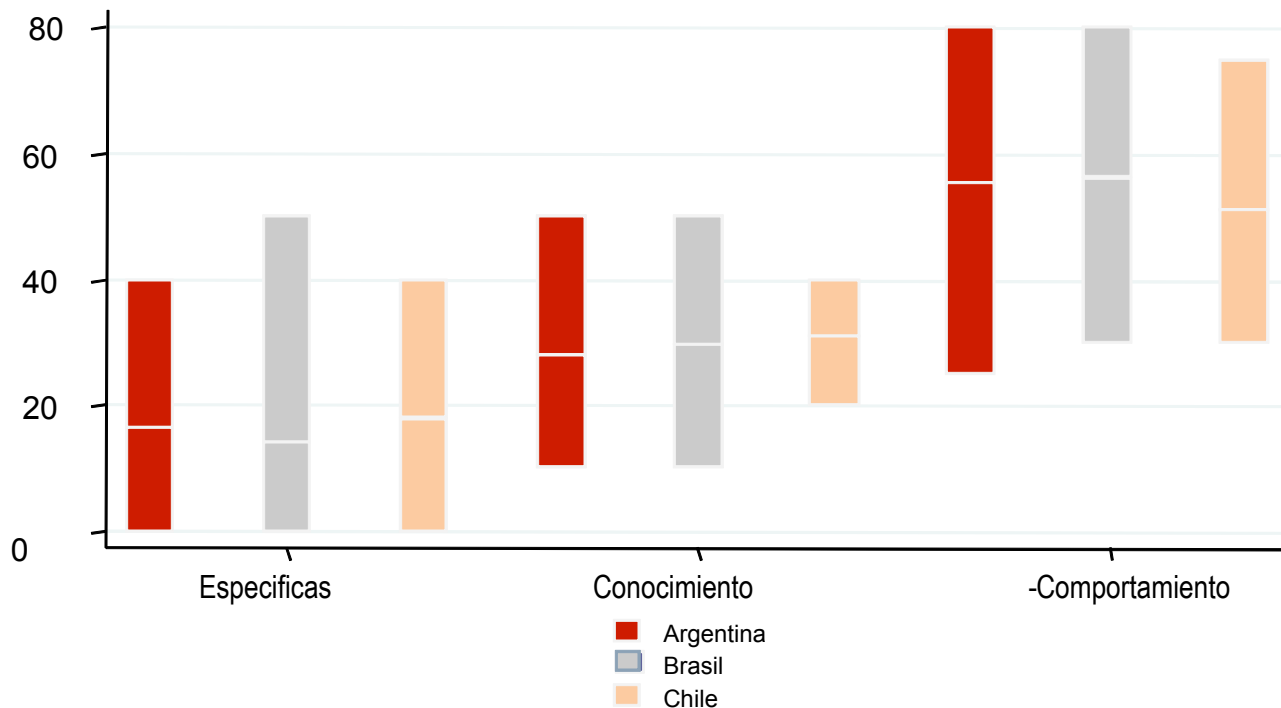
Fuente: Bassi, Rucci y Urzua, 2013.

But beyond enrollment
(coverage)...

What about quality?
Skills?

What type of skills are demanded by firms in LACs?

Valoración de las firmas (%) por grupo de habilidades en ALC



Fuente: Desconectados, 2012

Encuesta sobre Demanda de Habilidades (Argentina, Brasil, Chile)

Lack of quality and relevance

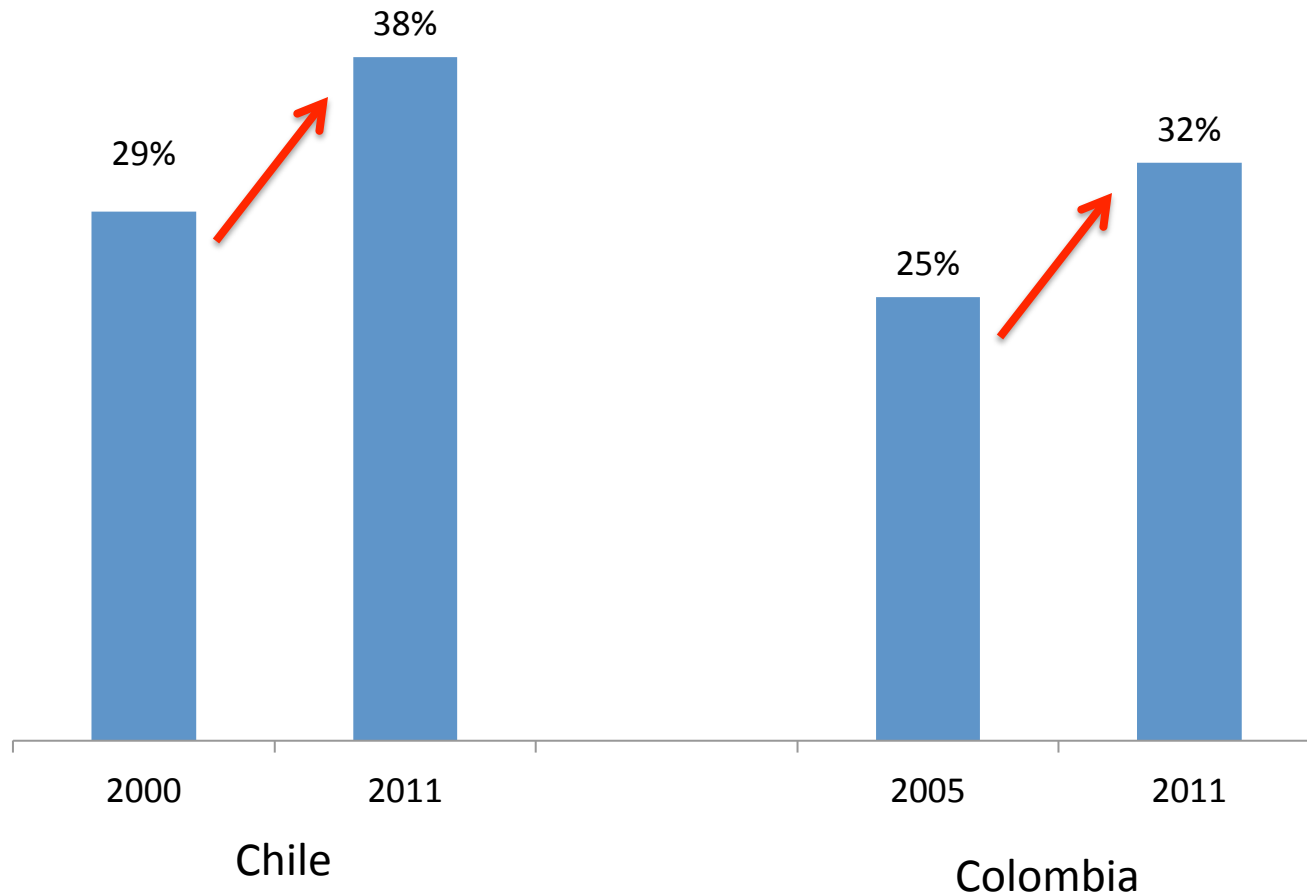
Training systems have missed the target:
They do not remediate the lack of soft skills
in the population already documented in the
literature.

Impacts on returns?

- *Rodriguez and Urzua (2011)*: After controlling for selection, FRANQUICIA TRIBUTARIA (Chile) has no impact on employment/earnings.
- *Prada and Urzua (2015)*: Returns to mechanical abilities > cognitive abilities.
- *Rodriguez, Reyes and Urzua (2015)*: Large heterogeneity in returns. Urzua (2012), *Gonzalez-Velosa et al (2015)*: Negative returns to post-secondary education in Chile and Colombia.
- *Bucarey and Urzua (2013)* *Ñopo y Bassi (2013)*: Positive returns to technical secondary education!

Vocational and technical postsecondary education “responded”

% of students enrolled in technical and vocational HEI



Sources of Information

Chile:

- www.mifuturo.cl : Official web site
 - Income levels after four years of graduation by degree and institution (SII & UI)
 - Tuition costs (SIES)
 - Length of degrees (SIES)
 - Data for 126 technical/vocacional degrees and 327 college (university) degrees
 - This source of information was designed to help families/students in their college application processes.
- Individual-level data on administrative records by degree and institution (2003-2013)
- We complement the data with information from CASEN

Sources of Information

Colombia

- We combine three different individual-level sources of information (agreement with MEN-ICFES):
 - Information on degrees and institutions (SNIES).
 - College admission tests (SABER).
 - Social security information (income and contributions) for college graduates (Observatorio de mercado laboral)
- 580k graduates from 2008 to 2010 (~60%)
- As in the case of Chile, we complement the data with household surveys (Gran Encuesta Integrada de Hogares)

Defining the returns

$$r_p(i,j) = \frac{VPN(i,j) - VPN_p}{VPN_p}$$

- $VPN(i,j)$: Present discounted value of alternative (i,j) net of tuition costs.
- $VPN(p)$: Present discounted value of “high school degree” from the p-th percentile of the income distribution.
 - Higher percentiles: Positive selection.
 - Median: Lower bounds.
- Data: Longitudinal administrative information + returns to experience computed from household surveys

Heterogeneous net returns to postsecondary education

	Chile		Colombia	
	University	Technical	University	Technical
Average	62%	0%	26%	-2%
Median	52%	-5%	22%	-5%
10th percentile	-15%	-41%	-23%	-33%
90th percentile	167%	52%	78%	25%
Standard deviation	66%	38%	45%	64%

Source: Authors' preparation based on data from the ministries of Education of Colombia and Chile

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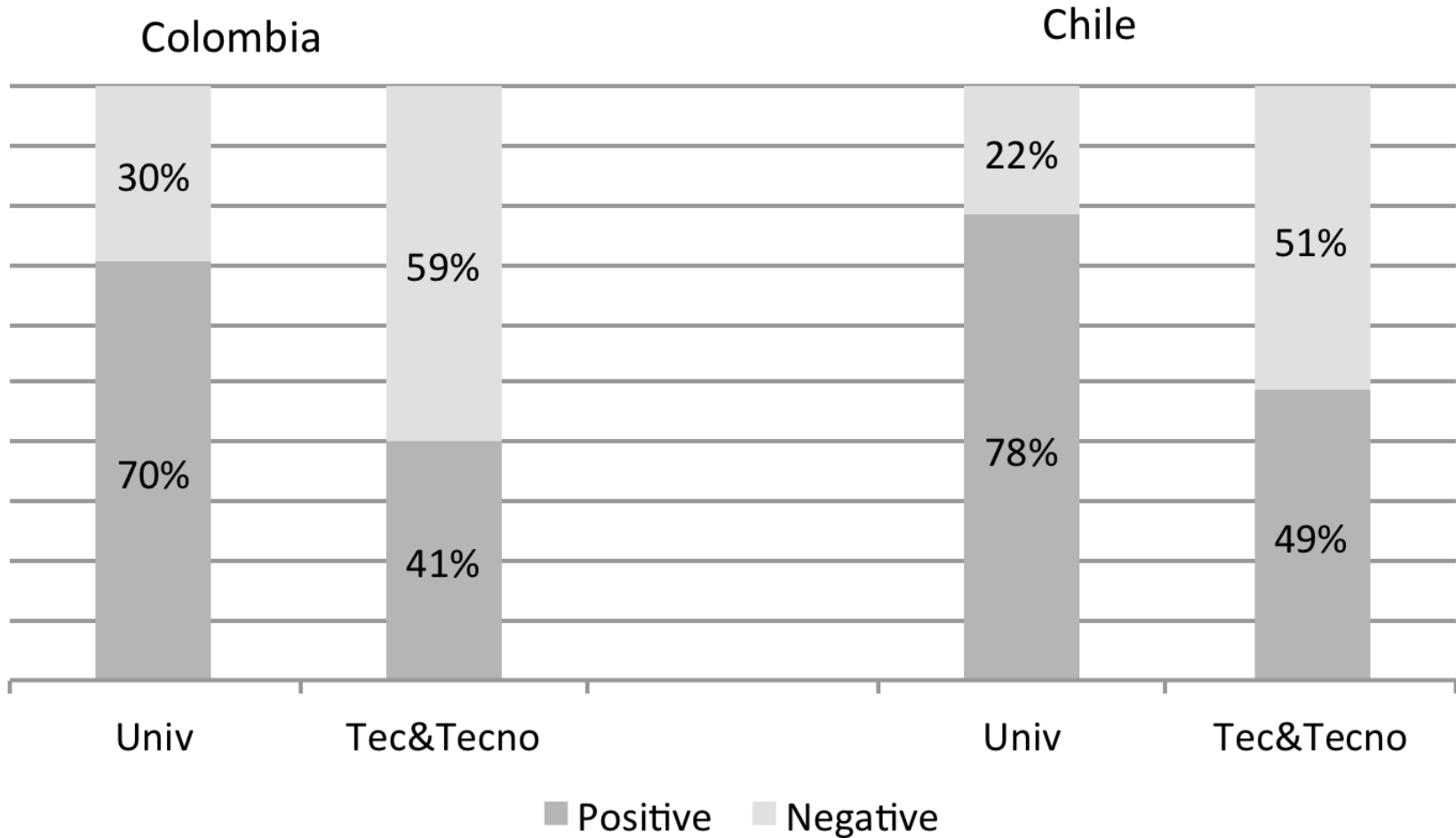
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Heterogeneous net returns to posts-secondary education

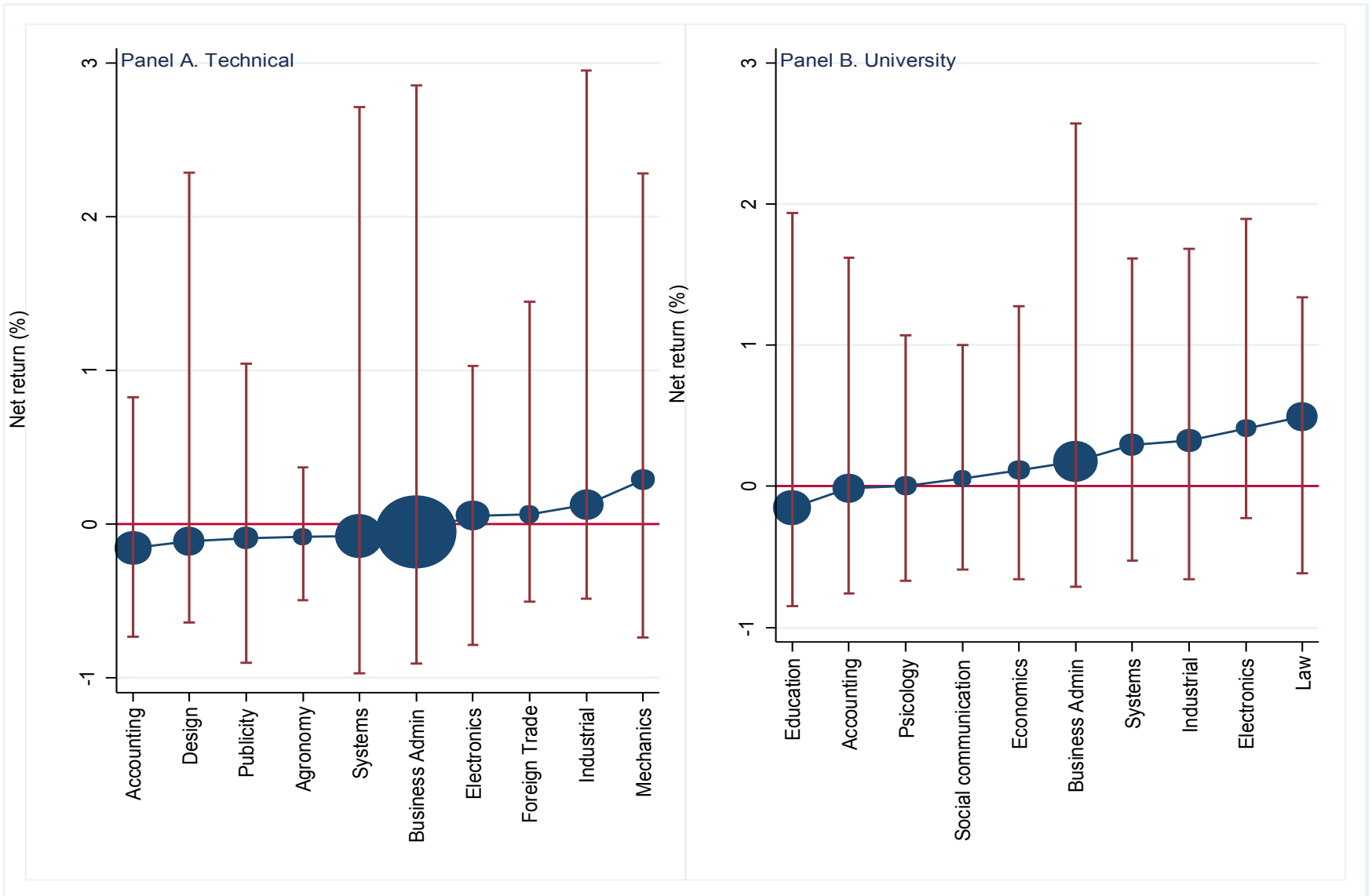
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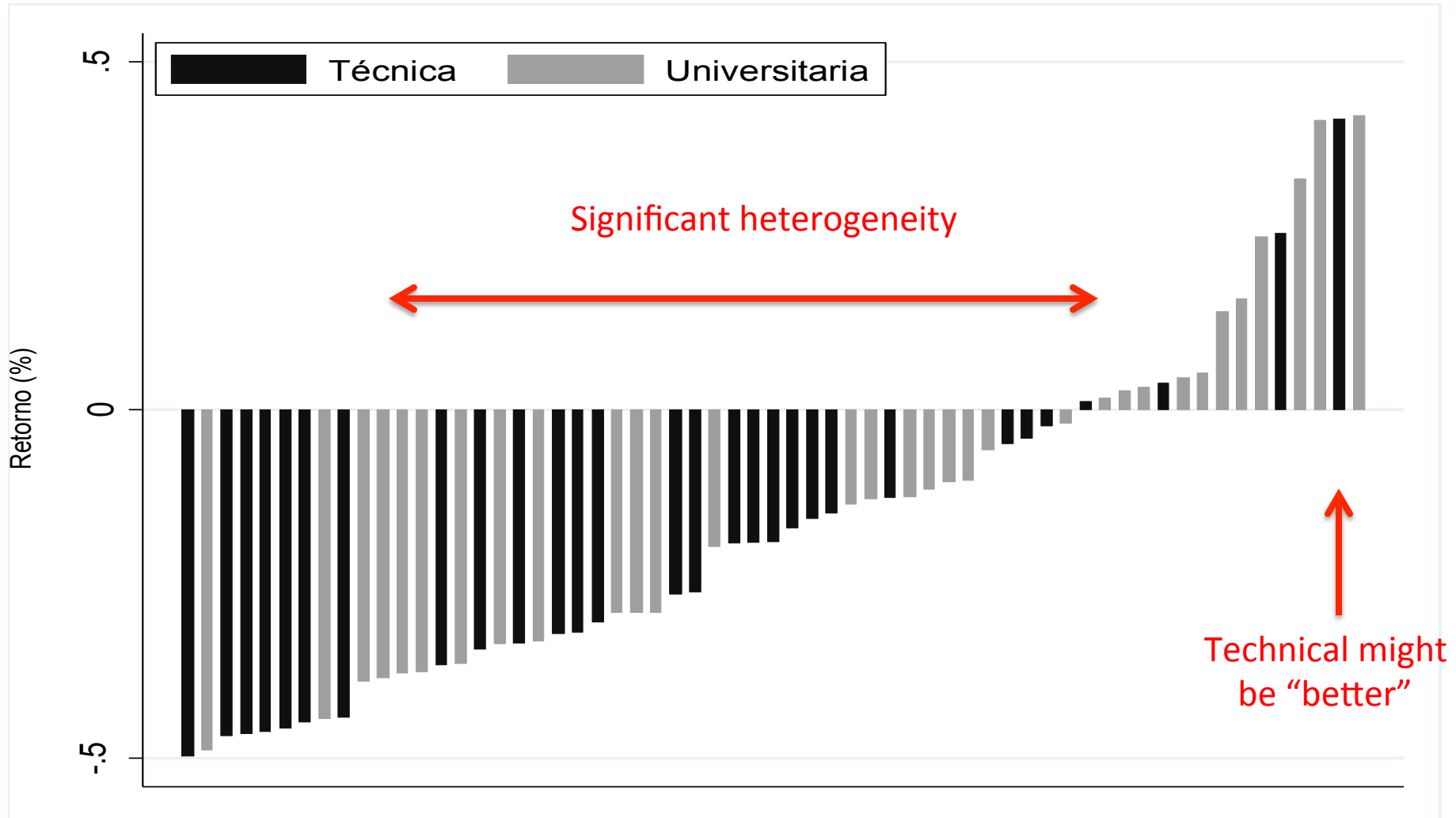
% of higher education “graduates” facing positive/negative returns



Net returns to “most popular” degrees in Colombia: Averages and dispersion



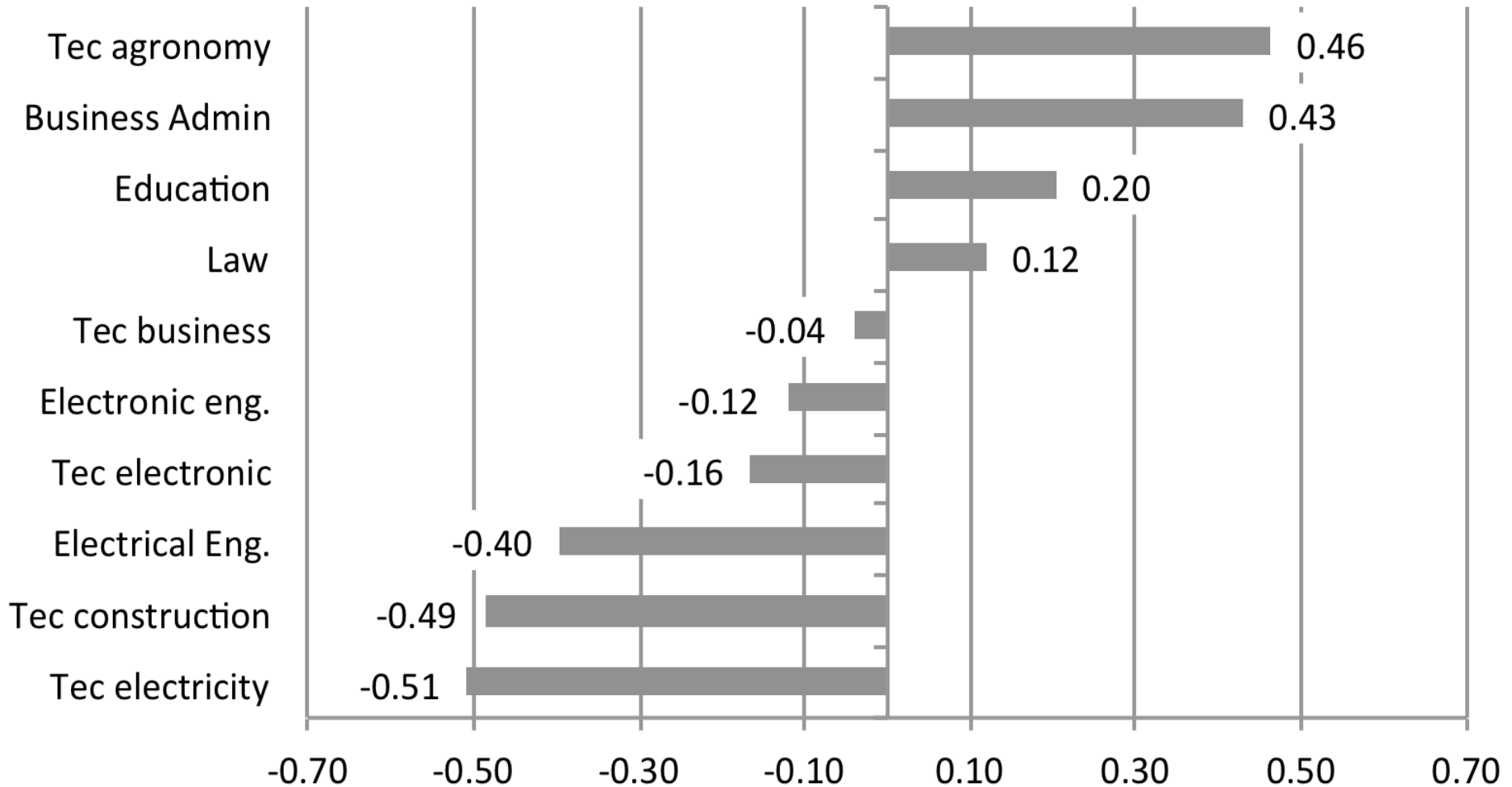
Net returns to “accounting” in Colombia: Technical versus University



Note: we constructed net returns for accounting for 217 HEIs. We only plotted the returns of the 38 degrees with the largest number of graduates in our database.

What about certification?

Difference in net return between accredited vs. non-accredited HEIs - Colombia



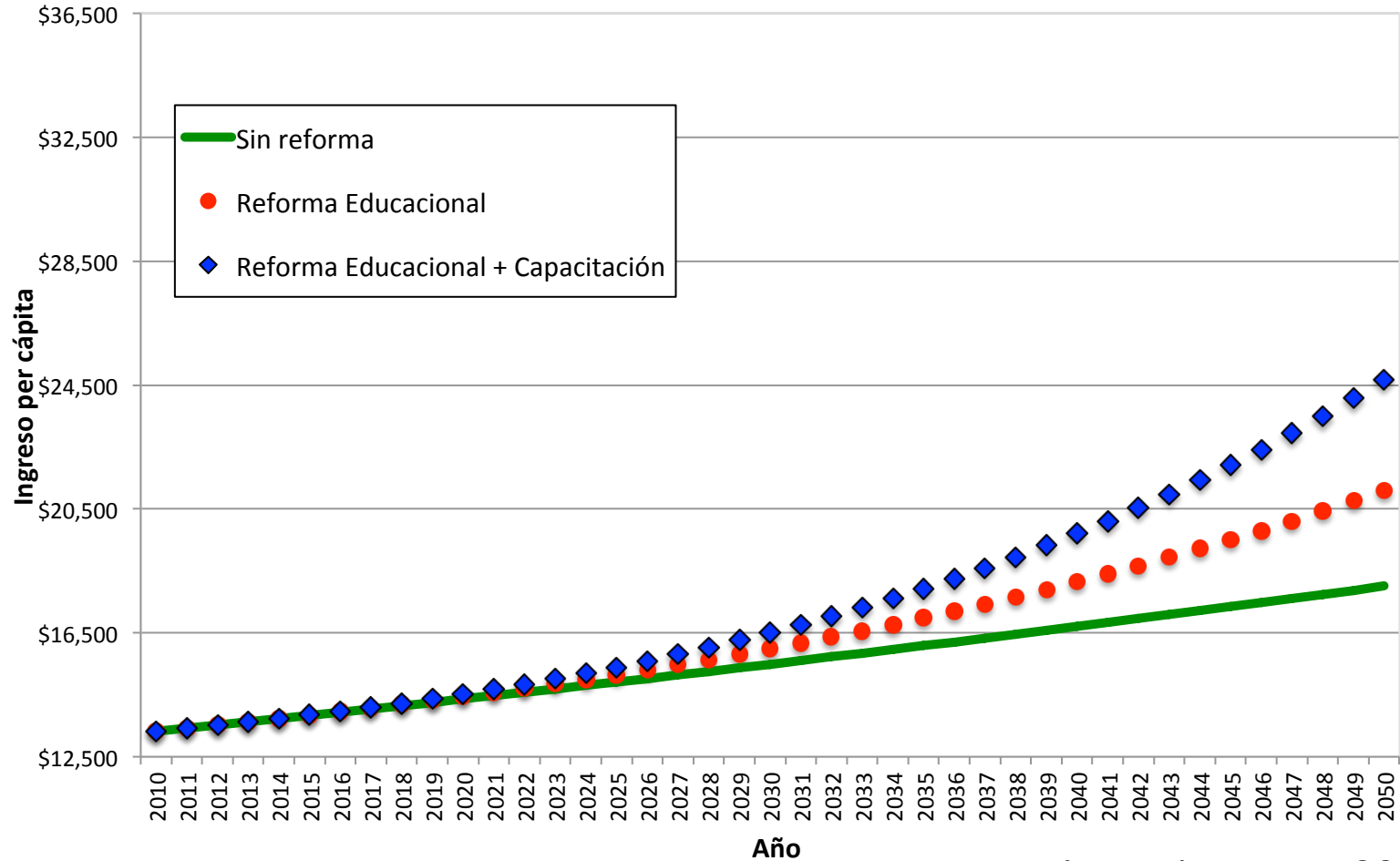
What is the cost of not acting today?

- Hanushek y Woessmann (2011); Bassi, Rucci y Urzua (2013).
 - ✓ Economic losses due to deficits in education.
 - ✓ Two exercises:
 - » Reform : 50 points PISA (0.5 st. dev) in 10 years
 - » Reform + training : 50 points in PISA in 10 yrs + comparable efforts in training.

Mexico: pc GDP 2010-2050

(different exercises)

México - Ing. per cápita distintos escenarios de reforma



Fuente: Bassi, Rucci y Urzua, 2013.

Lessons from other countries

Successful experiences share:

1. Well defined **institutions**: Clear objectives and accountable people.
2. **Funding**: Preventing corruption (information) and aligning incentives (complicated equilibrium)
3. **Continuous monitoring** (accountability vs. information) and **evaluation**.
4. **Integrated and flexible system**.

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Conclusions

The region deserves a novel and better strategy:

There is no silver bullet but we have to act: we are jeopardizing the future.

What about leaving commonplace assertions?

It is not only a matter of resources and yes: market imperfections will be always there, but also bureaucratic inefficiencies.

All in all: Trial and error will continue. The question is how to make it productive. Here the text does not give many clues.