

Latin America inequality:

*Recent decline and
prospects for its further reduction*

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Conference on Inequality: Measurement, Impacts and Policies

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FALLING INEQUALITY IN LATIN AMERICA

POLICY CHANGES AND LESSONS

Edited by
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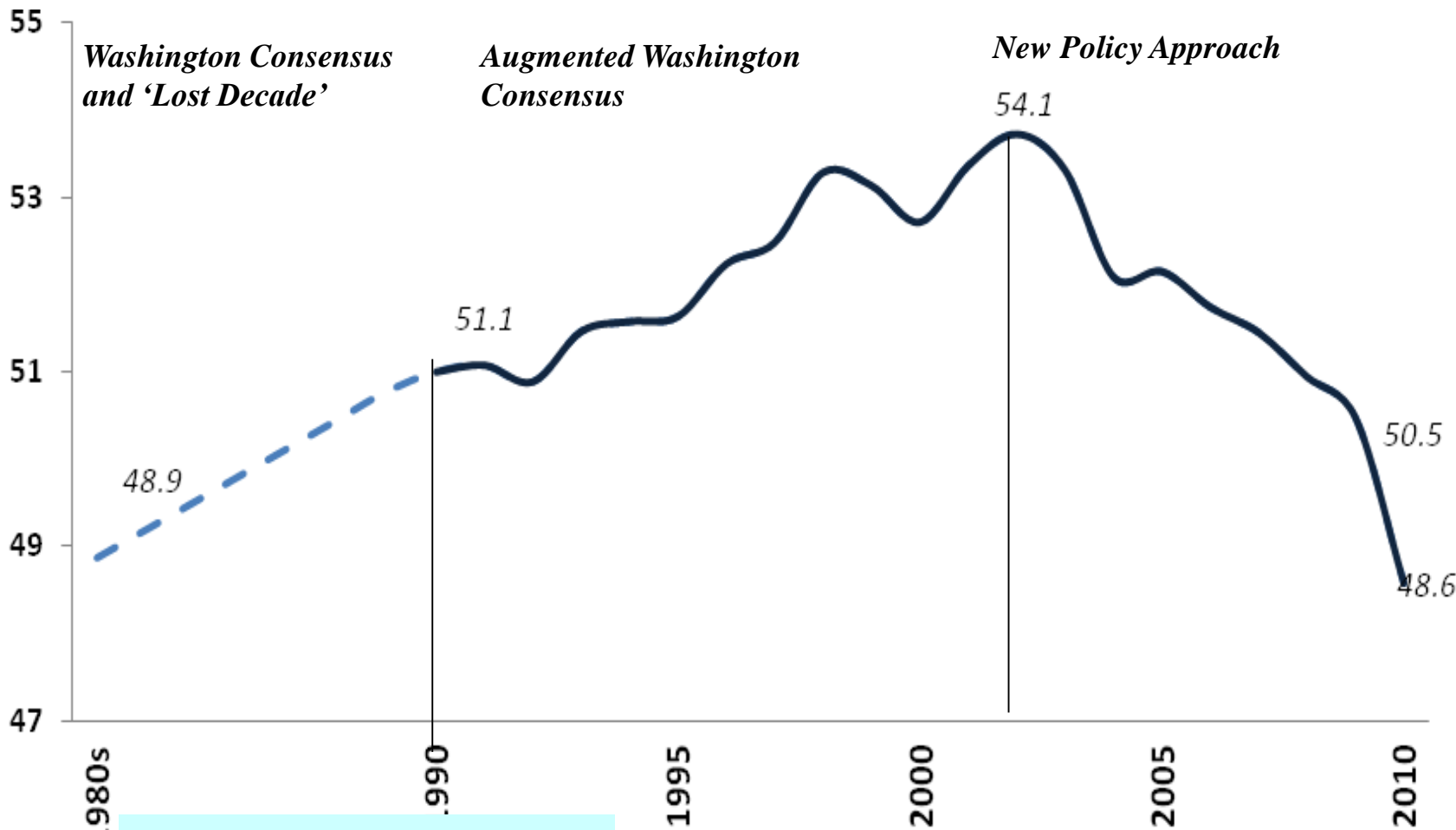
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1. Trend in av. regional Gini of distribution of household income/c

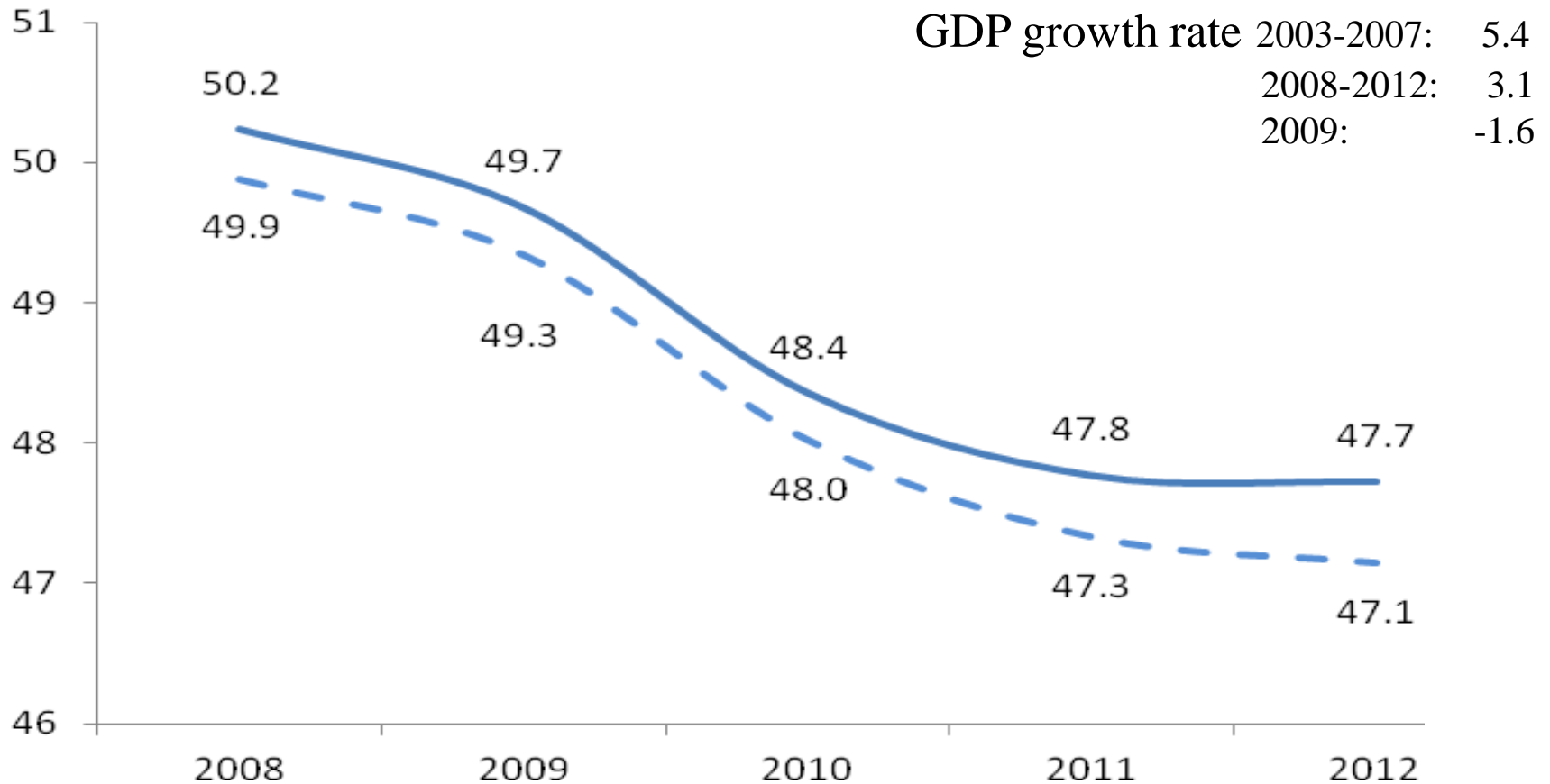


Gini decline 2002-2010:
 LA = - 5.5
 SA = - 7.0
 CA = - 3.9

Min: Nicaragua = + 2.1*
 Max: Argentina = - 9.1

Is the decline in Gini **cyclical** or **structural** ?.....

Gini declines also during the turbulent years 2008-2012



Cornia (2014) on CEDLAS & CEPAL data for 11 countries with complete data for 2008-12, i.e.: **Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Panama, Peru and Uruguay**. The dotted line includes Uruguay (which recorded a higher-than-average Gini drop over 2008-12). The solid lines excludes it.

Gini decline: cyclical or structural ?

» 2002-8

2008-12

2009

Av GDP growth rate + 5.4

+ 3.1

- 1.6

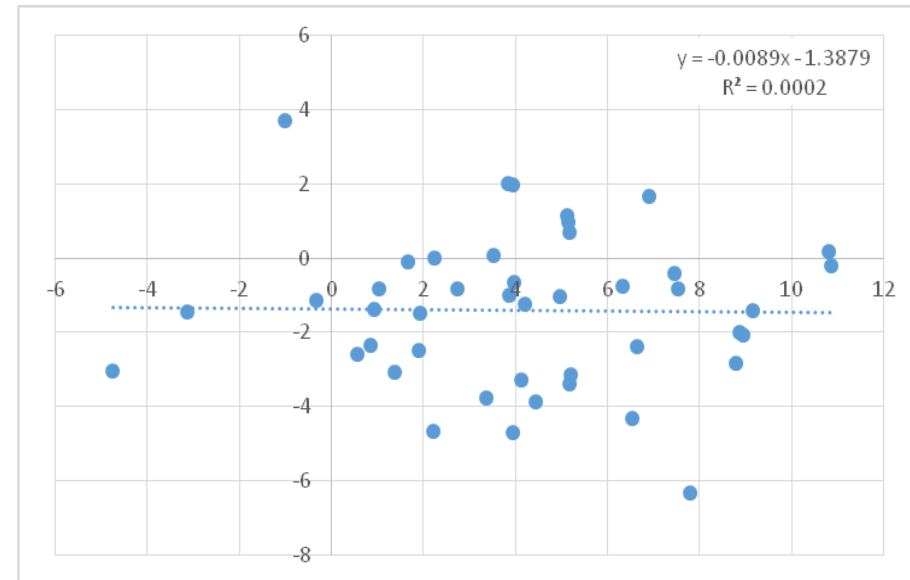
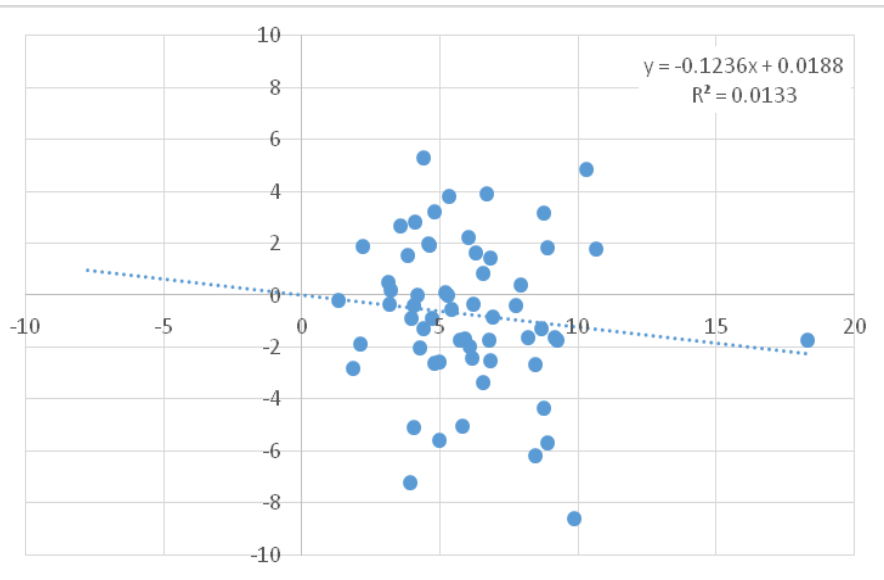
Average Gini decline - 0.40

- 0.70

- 0.60

2002-2007

2008-2012



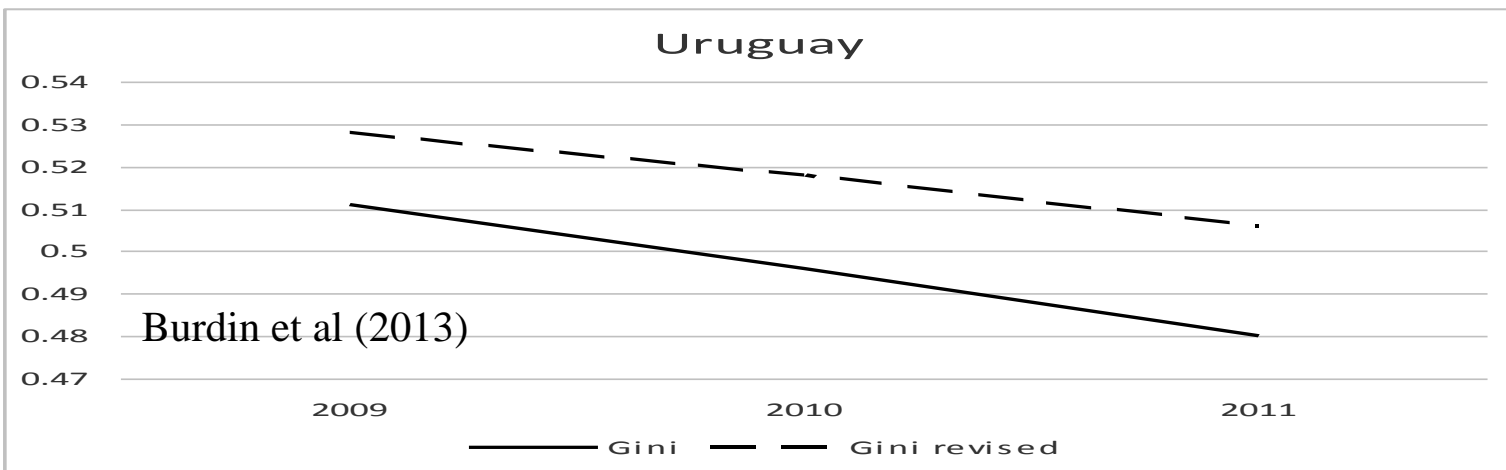
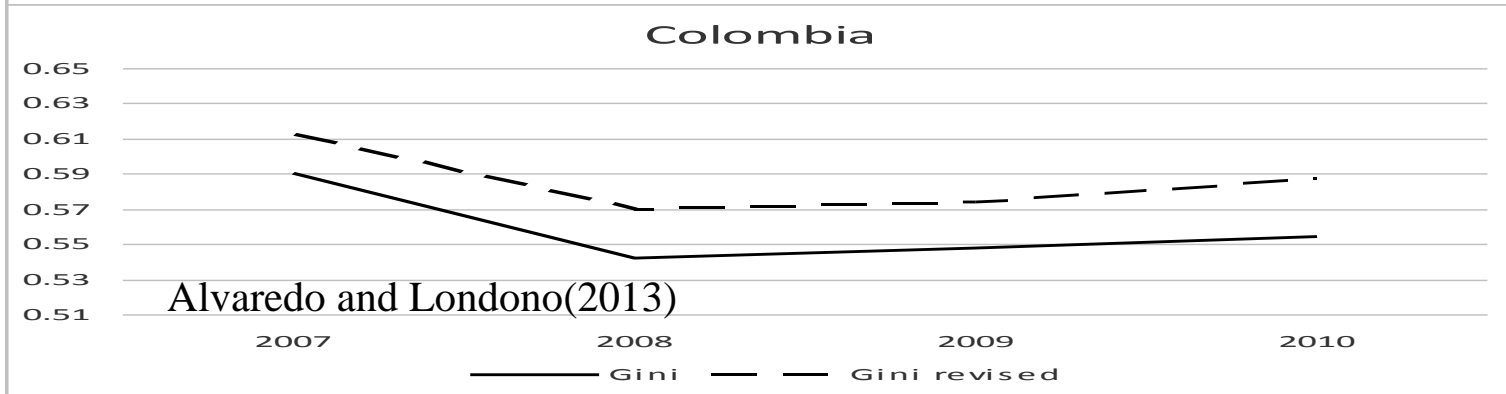
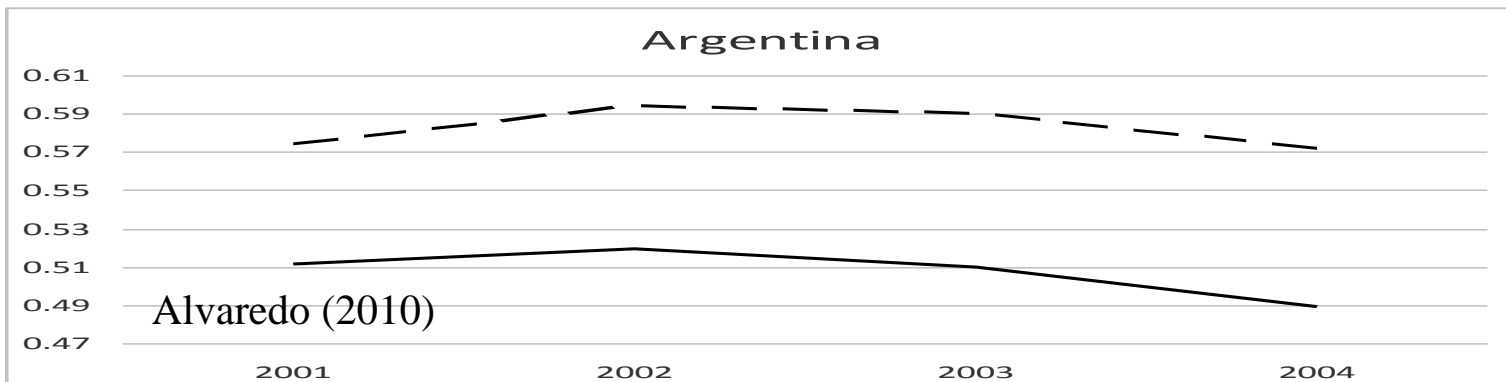
Gini gr.rate= 0.018(-0.02) – 0.123 GDP growth rate(-0.94)

Gini gr. rate= - 1.387(**-2.86**) –0.009 GDP growth rate(-0.10)

Note: t statistics in parenthesis.

But, do the HBS-Gini bias the inequality trend ?:

Trends in HBS and 'corrected' Ginis



Latin America stands out in relation to other regions

Trends in the Gini coefficient of household income/c, 1980-2000 and 2000-2010

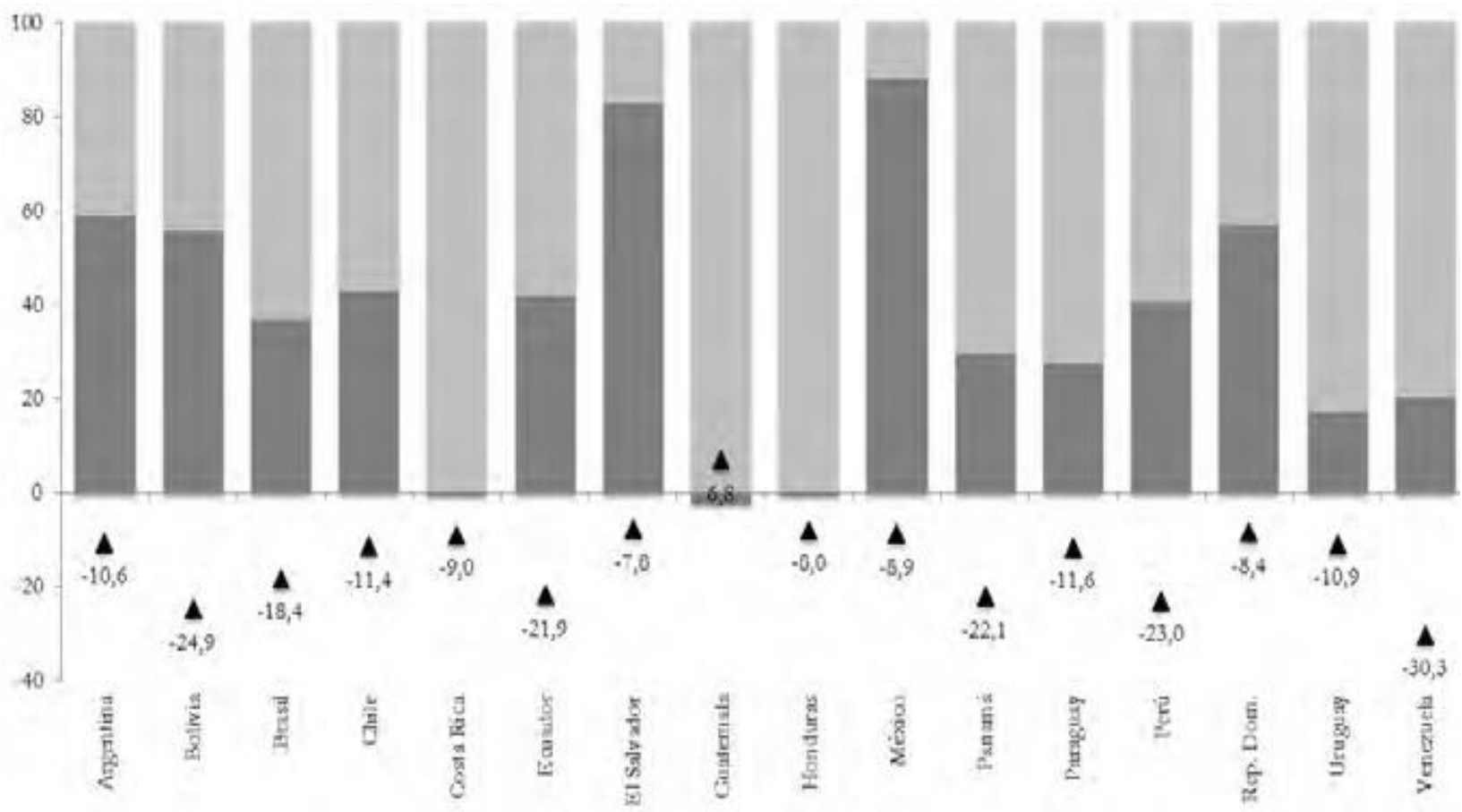
	OECD	EE-FSU	Asian Transition	L.A.	MENA	SEA	South Asia	SSA	World
1980s and 1990s									
Period	1980- 2001	1990- 1998	1980- 2000	1980- 2002	1980- 2000	1980- 1995	1980- 2000	1980- 1995	
Rising inequality	14	24	2	14	2	5	3	9	73
No change	1	0	1	1	3	0	0	2	8
Falling inequality	6	0	0	3	3	2	2	8	24
Total	21	24	3	18	8	7	5	19	105
2000-2010									
Period	2000- 2010	1998- 2010	2000 – 2009	2002- 2010	2000- 2007	1995- 2009	2000- 2010	1995- 2007	Total
Rising inequality	9	13	2	2	4	3	4	7	44
No change	4	5	1	1	0	0	1	1	13
Falling inequality	8	6	0	15	4	4	0	13	50
Total	21	24	3	18	8	7	5	21	107

Source: Cornia and Martorano 2012

Relevance:

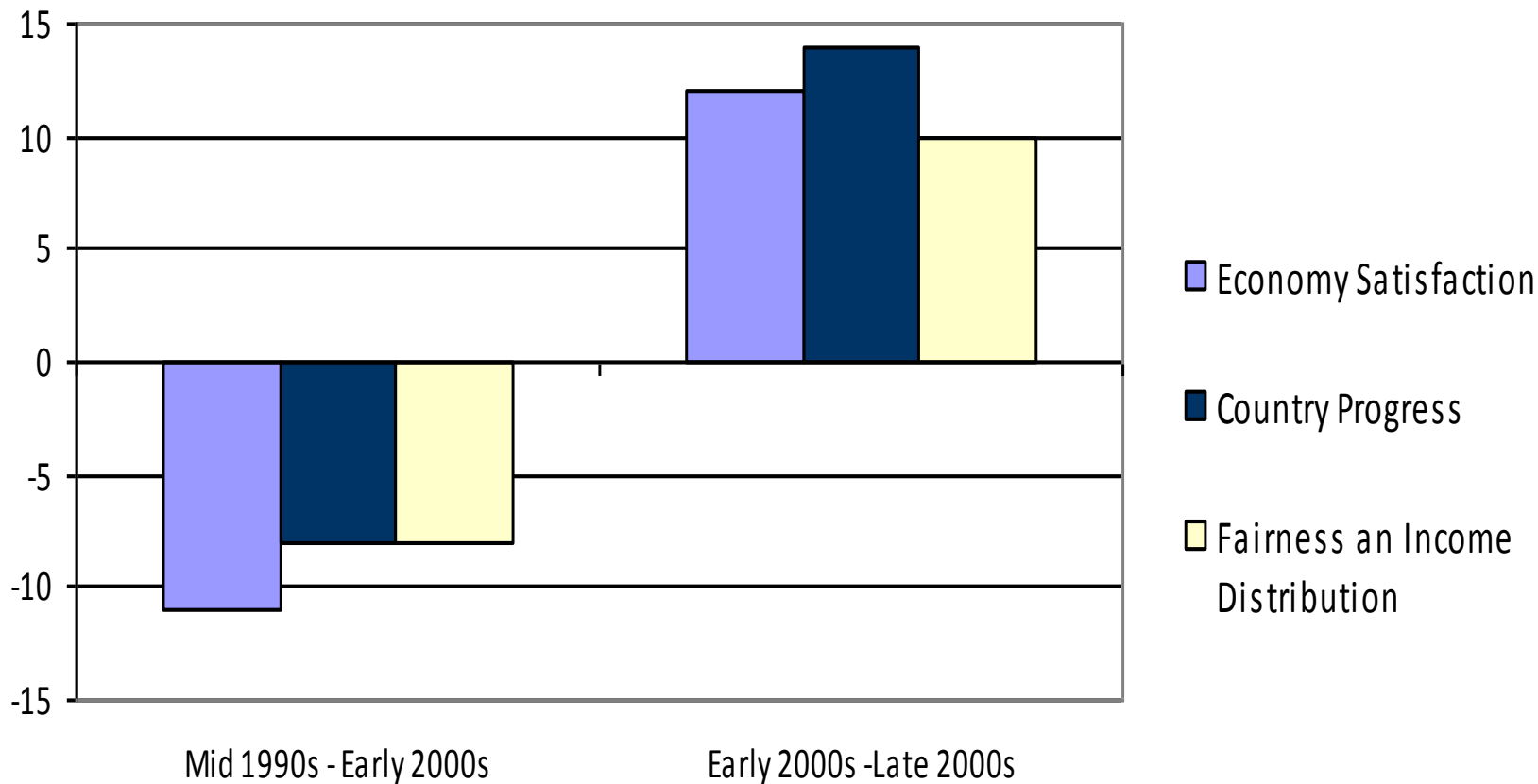
inequality drop accounts on average for 40% of poverty decline

Dark bar = distributive effect, **Light bar** = growth effect, **Arrow** = %f poverty drop



Source: Lustig, Lopez-Calva, Ortiz 2014

Changes in people's perception of performance and fairness in income distribution, mid 1990s-early 2000s TO early-late 2000s



Source: Author elaboration on Latinobarómetro (2010)

2. Explaining the inequality drop 2002-12

(i) 'luck' (good global conditions)? (ii) growth? (iii) policies?

To reply this question, we use two approaches :

1. Immediate causes of inequality drop - based on micro-decompositions of household budget surveys (HBS) data
2. Underlying causes of inequality drop based on economic theory, panel regressions, sectoral studies,

..... and compare whether the results obtained agree

2.1. Immediate causes of inequality decline

(based on micro decompositions of hbs data)

- **(i) immediate** (statistical) **causes** of inequality fall are identified on the basis of decompositions of HBS data at two points in time.
- Three methods for decomposing HBS data:

Milanovic: Gini decomposable as:

$$G_{jt} = \sum sh_{jt} C_{jt} \quad j = uw, sw, r, rk, tr, re$$

$$\Delta G = \sum \Delta sh_j C_{jt} + \sum \Delta C_i sh_{jt} + \sum \Delta sh_j \sum \Delta C_j$$

- **Lerman and Yitzhaki**. Gini of total income, with k different sources of income, can be expressed as:

$$G = \sum_{k=1}^K S_k G_k R_k \quad k = uw, sw, r, rk, tr, re$$

- where S_k = share of income type k in the total income; G_k = Gini coefficient of income k ; R_k is the correlation between income source k and total income.

Results of microdecompositions (**immediate causes of Δ Gini**)

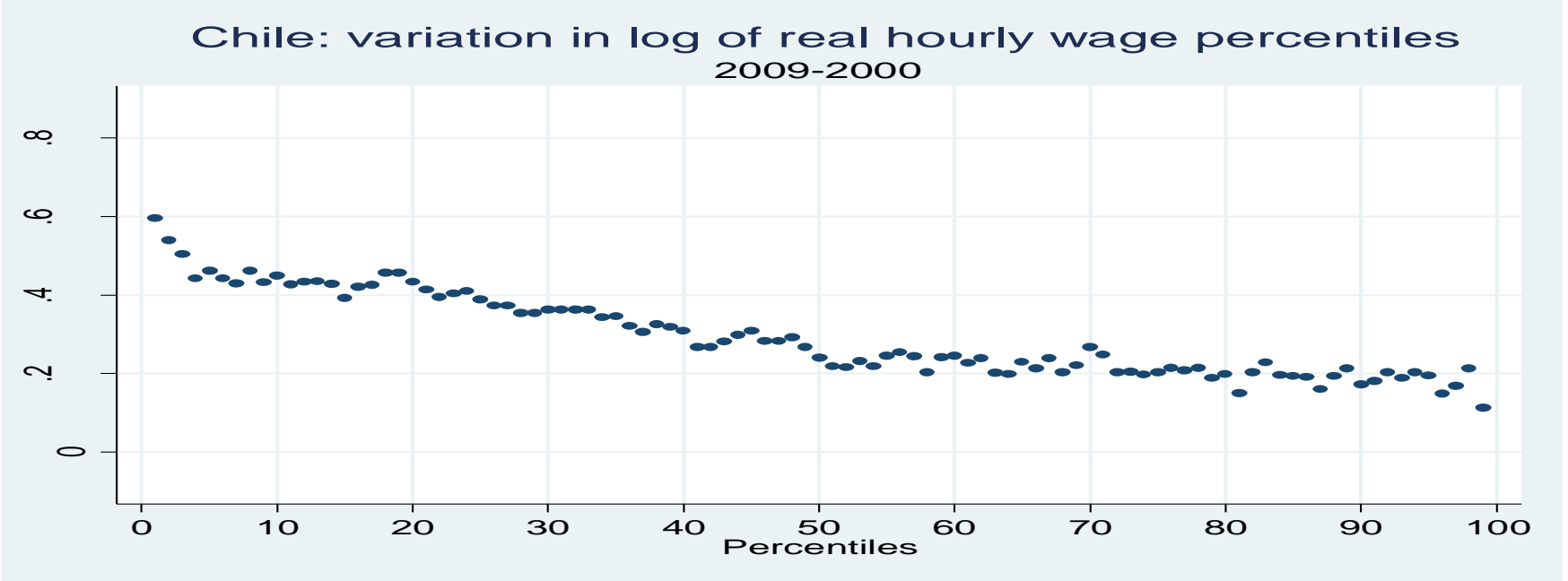
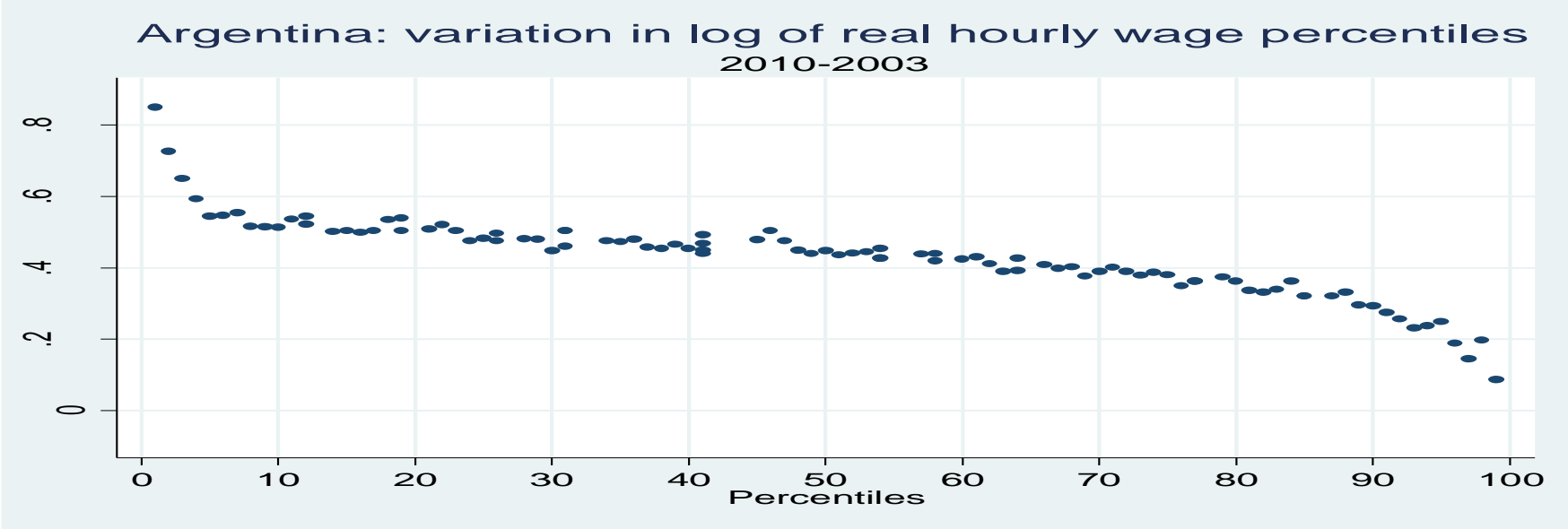
	Polit. Regime	Period considered	Abs. change Gini overall income	Abs. change in Gini labour income	% change in skill premium	% change in rural-urban wage gap	Absolute change in the Gini of:		
							Cap. income	Public transfers	Remittances
Chile	C.Left	1990-2000	+0.7	+2.4	+34.2	not relevant	—	Stable	not relevant
	C.Left	2000-10	-4.3	-3.8	-35.1	not relevant	—	Equaliz	not relevant
Ecuador	Right	1990-2001	+14.0	+14.0	+25.4	—	+15.	Neglig	Neglig
	CL,Left	2001-10	-10.0	-11.0	-21.5	-10.0	-18.	Equaliz	Equaliz

Results of decomposition of Gini decline by income sources

	ARGENTINA	BRAZIL	CHILE	MEXICO	PARAGUAY	URUGUAY
Income sources	2003-2010	2001-2009	2000-2009	2000-2008	2004-2009	2006-2010
Labour income	73%	62%	44%	60%	55%	66%
Registered wage earning jobs	43%	34%	33%	18%	-2%	63%
Non-registered wage earning jobs	13%	6%	12%	71%	22%	-2%
Non-wage earning jobs	17%	22%	-2%	-29%	35%	5%
Pensions	24%	14%	26%	1%	3%	21%
Public cash transfers	-5%	20%	28%	26%	2%	10%
Other non-labour incomes	8%	4%	3%	13%	41%	2%
Variation in Gini Index (in pp)	-10.1	-5.1	-3.8	-1.9	-7.4	-3.7

Source: Keifman and Maurizio 2014

Growth incidence curves of real hourly wages, 2000s



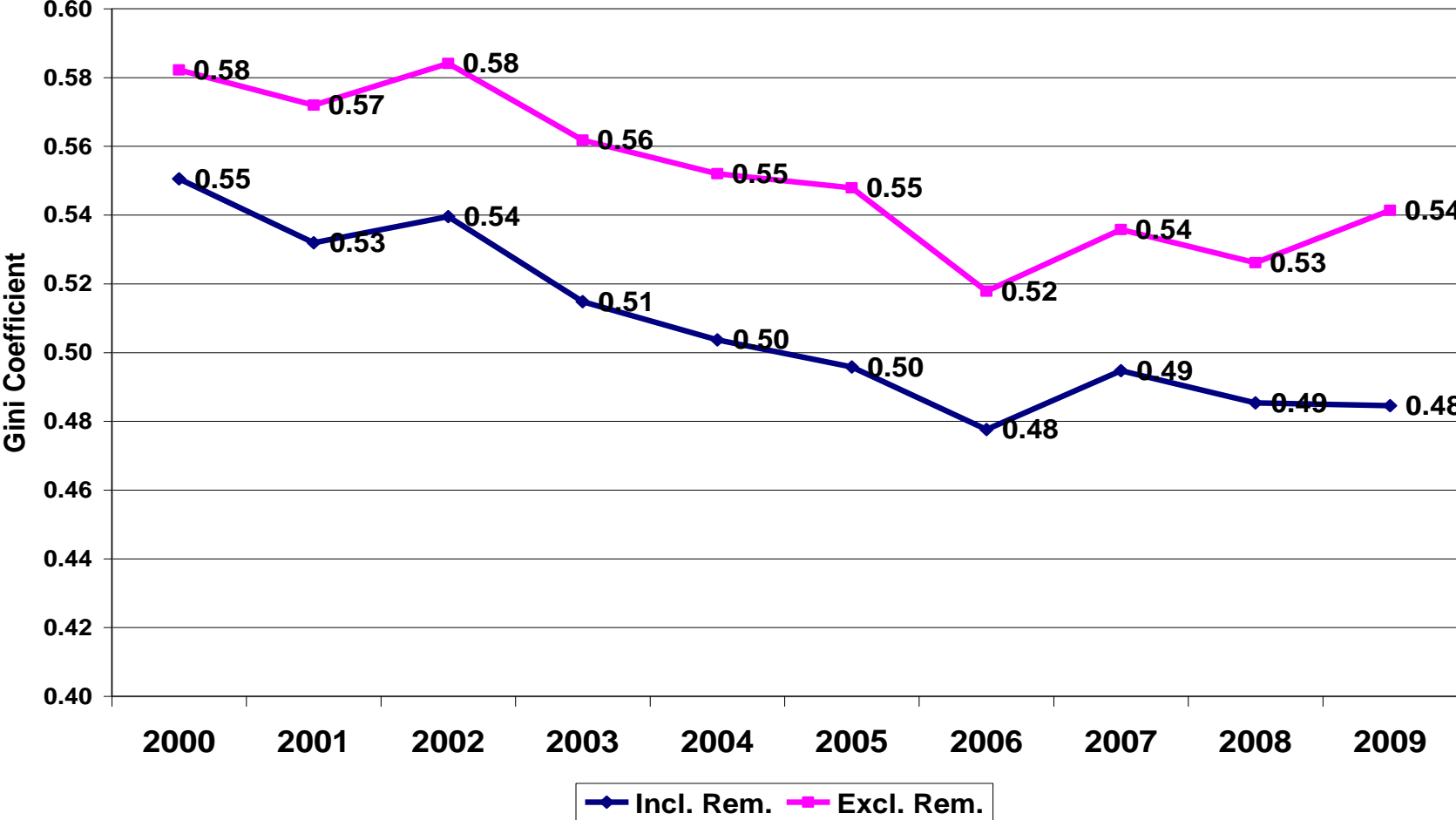
Source: Keifman and Maurizio, (2014)

Findings of the decompositions for 6 case studies

- (i) a decline of returns to education and of the wage **skill-premium** (**figure**)
 - stagnant demand for skilled labour (after its rapid increase during the 1990s);
 - rising supply of skilled labour due to higher public spending on education;
 - Worsening quality of higher education or of the additional (poorer) students
 - high demand of unskilled workers due to policies favouring the labour-intensive traded sector;
 - falling supply of unskilled labour due to + education, a fall in births & rising emigration.
 - Institutional factors (higher minimum wages, unionisation)
- (ii) where relevant, drop in **urban-rural wage gap** (due to competitive RER or rise in world agricultural prices)
- (iii) + **social assistance transfers** due to ↑ tax collection & better spending targeting
- (iv) rise of **remittances on total income** (equaliz. in 3 countries not others (**figure**))
- (v) limited data on **capital incomes** and incomes of ‘working rich’ (top 1%)

Remittances are increasingly equalizing in El Salvador

Gini coefficient of household income/c,
including and excluding remittances



Source: Azevedo and Cabrera 2014

2.2 underlying causes of Δ Gini

(econ. theory, sectoral studies macro-panel regressions)

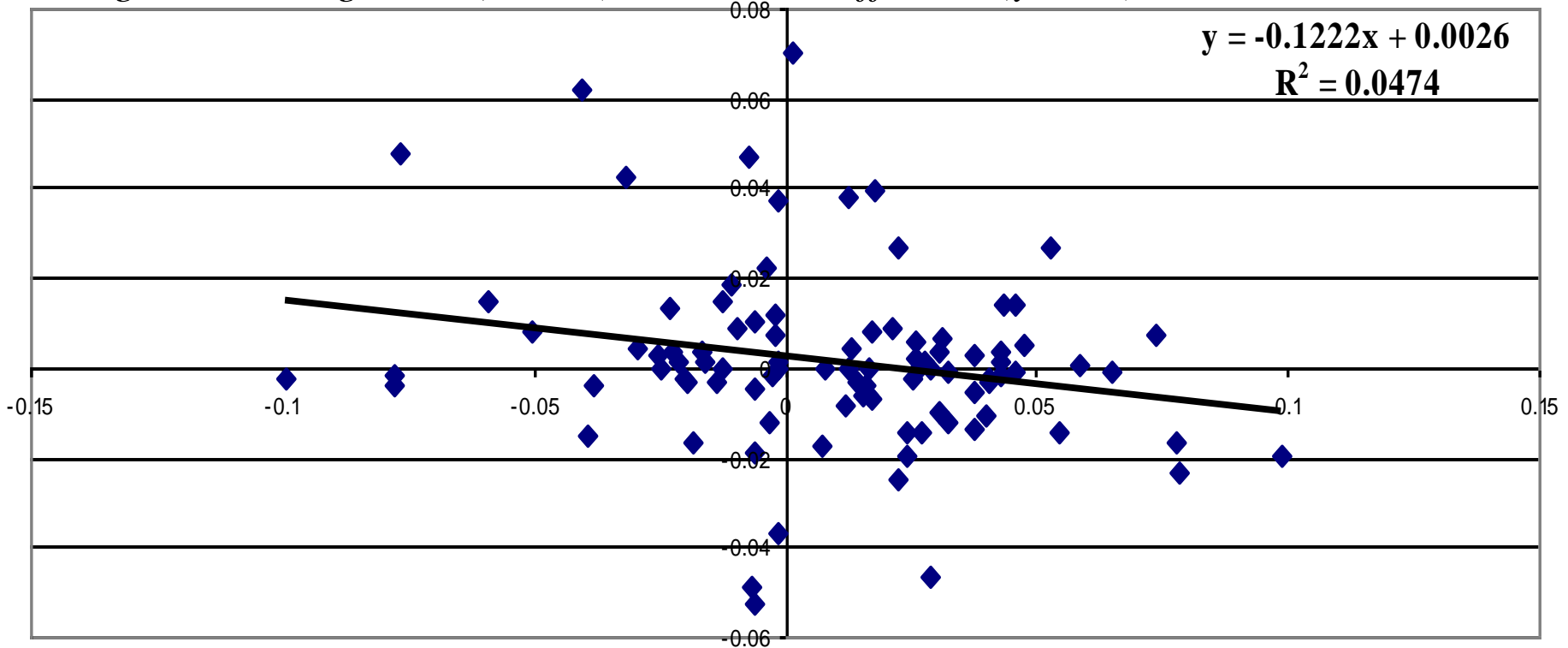
- 1. Luck: favorable external conditions (trade, remittances, finance)
- 2. Impact of rapid growth of 2002-08 and 2010
- 3. Exogenous changes in dependency/participation rates (**ignored here**)
- 4. New policy model (macro, labor, tax, educ/health, social transfers)
- 5. Transition to democracy and ‘left decade’

(i)luck: (favorable global economic environment)

- Terms of trade rose for 6 yrs (except for C.America), then fell
- migrant remittances rose in C.A., Andean countries, Mexico
- Financial bonanza (2004-7 capital inflows = 2.4 % GDP)
- Direct distributive effects of these changes
 - Inequalizing (due to high asset concentration in export sector/finance, remittances are often unequalizing)
 - Were bonanza impact on tax revenue/GDP equalizing? Only a bit **(figure)**
- Indirect effect: favorable on growth as (i) positive ‘income effect’, (ii) + current account balance + growth → + jobs →
- Overall, theory predicts these changes were little equalizing or un-eq.

(ii) Fast growth of GDP & jobs of 2002-08 and 2010?

% changes in GDP growth (x-axis) and Gini coefficient (y-axis) over 1990-2007



- in LA 'growth's impact on inequality is very **small and non significant**

- **fast growth** is no guarantee of falling ineq. (as shown by China/India)

-
-much depends on the '**pattern of growth**' (capital intensive, unskilled labour intensive, regionally balanced, etc)

(iii) Deliberate policy changes ?

The Politics of policy changes

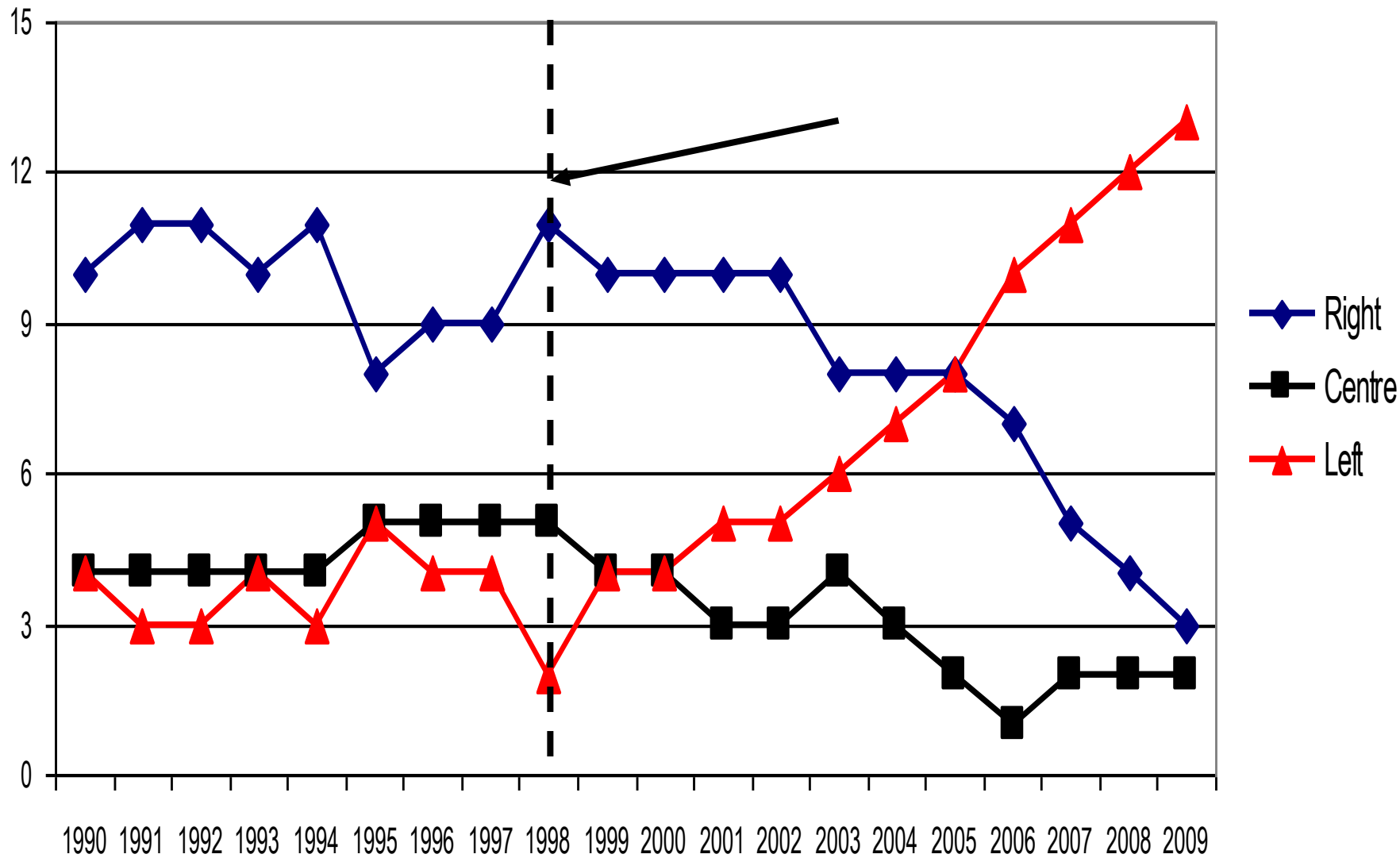
- Gradual return to democracy since 1980s-90s
- Democratic consolidation in the 1990s (institution building takes time)
- Rising dissatisfaction with results WC policies (see Latino Barometro)
- Shift towards Social-democratic and radical-populist regimes (no ideological realignment but focus is on economic interests)
- Changes in policies followed electoral results with short lags
- Policy spillovers (e.g. social transfers) also in countries with conservative regimes
- Thus, some fall in Gini also in more conservative regimes

Who won and who lost? Is Palma right?

Changes in income shares of poor (q.1-5), 'middle class' (q.6-9) and rich (q-10) over 1990-2002 (rising inequality) and 2002-9 (falling inequality)

Country	1990-2002	Income deciles			Δ Gini	2002-2009	Income deciles			Δ Gini
		1-5	6-9	10			1-5	6-9	10	
Argentina	1990-02	-4.68	+0.94	+3.74	+7.7	2002-10	+5.01	+ 2.81	-7.82	-9.0
Ecuador	1995-03	+1.82	-1.49	-0.33	-2.3	2003-09	+2.87	+2.65	-5.51	-5.6
Venezuela	1989-02	-2.97	-0.62	+3.68	+5.0	2002-06	+2.45	+0.45	-2.90	-4.0
Chile	1990-03	+0.51	-0.28	+0.23	-0.5	2003-09	+1.44	+0.79	-2.23	-2.7
Mexico	1989-02	+0.42	+0.85	-1.27	-1.1	2002-08	+0.25	+0.44	-0.68	-0.5
Uruguay	1989-02	-2.15	+0.16	+1.99	+3.0	2002-09	+0.87	-0.85	-0.01	-1.0
Regional Average		-0.63	-0.30	+0.93			+1.40	+0.73	-2.13	

Trends in political regimes (right, centre, left), 1990-2009



Average Gini Changes During the 2000s by Year-Specific Political Regime

• Gini points change	per period	yearly
• Radical left	-4.36	-0.51
• Social democratic left	-3.64	-0.92
• Centrist	-3.11	-0.56
• Centre-right & right	-0.70	-0.07

(iv) A new policy approach

(a) macroeconomics

A 'hybrid macroeconomic model' (WC elements & 'development oriented' macro policy)

- Prudent budget (1^{ary} surplus 3-4% GDP) monetary policy
- Active and progressive tax policy → +tax/GDP ratio +3 to 9 points
- Increasing public expenditure (+ 5 % GDP) especially on social public goods
- Countercyclical monetary-fiscal policy
- competitive real exchange rate (SCRER) → (+) T, (-) NT → (+) current account surplus and low interest rates, not universal (Brazil....)
- Better prudential regulation of domestic banks
- Unchanged open trade regime, but changing trade pattern,
- Changes in intl financing (lower foreign debt, reserves accum, debt substitution)
(charts)

(b) Labor market & income policies

- rise in n. workers covered by collective contracts
- work inspections against informal employment,
- Re-centralisation of wage bargaining in Argentina, Uruguay, Brazil
- rise in minimum wage (table)
- increase in minimum social pensions,

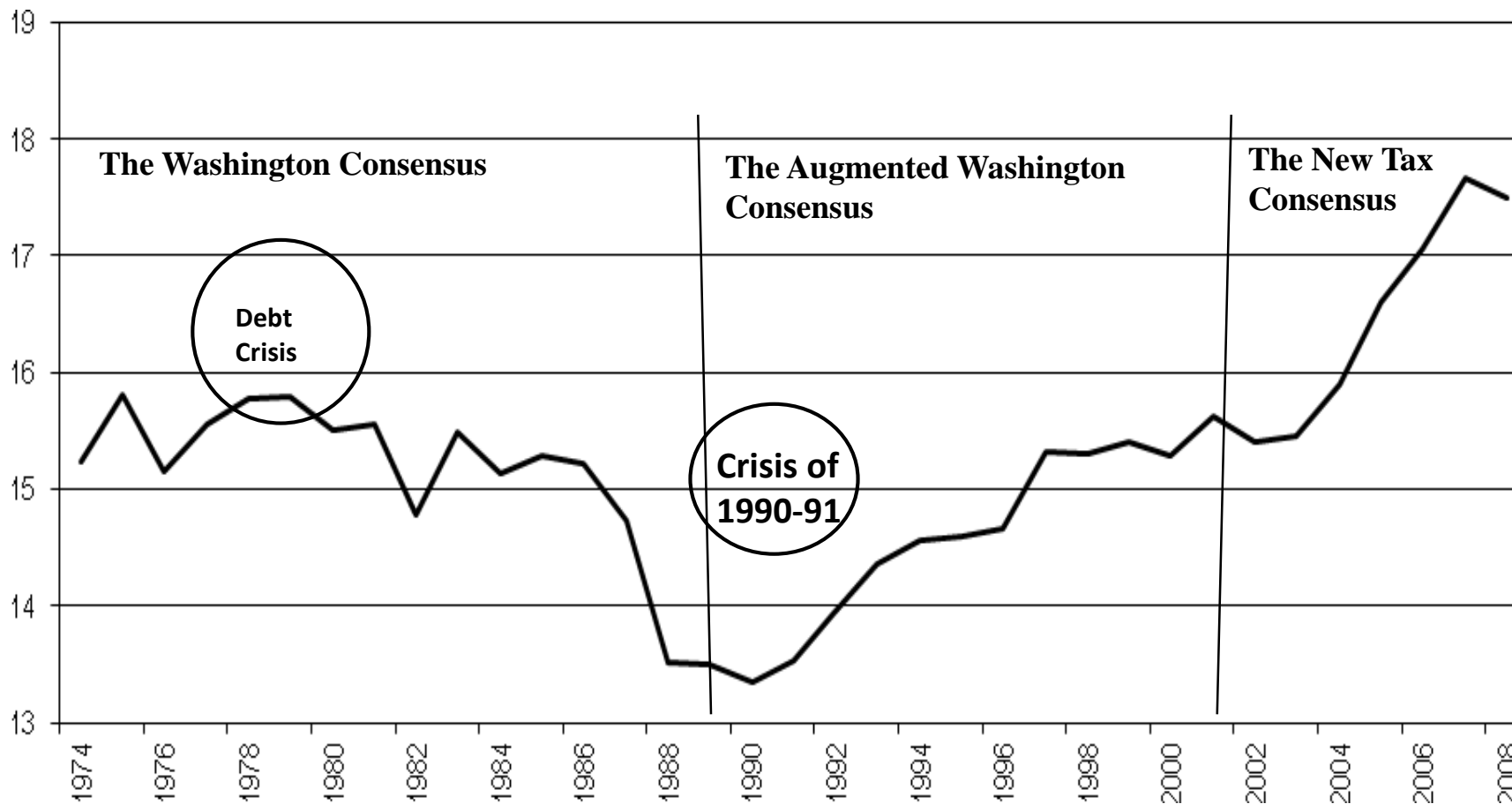
Index of **real** minimum wages (2000=100), selected countries

	2002	2004	2006	2008	2010
Years of left regimes					
Venezuela (1999)	94.5	92.7	113.9	107.2	93.8
Brazil (2002)	114.3	121.4	145.3	160.8	182.0
Argentina (2003)	81.4	129.8	193.2	253.3	321.3
Uruguay (2005)	88.7	77.5	153.2	176.9	196.8
Costa Rica (2006)	99.5	97.6	99.5	99.5	105.8
Nicaragua (2007)	105.9	113.5	128.5	141.6	174.6
Ecuador (2007)	112.5	122.2	130.0	146.7	161.5
Guatemala (2008)	108.6	117.6	119.6	111.9	122.0
Mexico (--)	101.2	99.1	99.0	96.2	95.6

(c) Tax policy and rising tax/GDP ratios

- Low initial tax/GDP ratio in relation to intl. norm
 - Neo-liberal tax revolution of 1980s-90s → - 1.5% tax /GDP, CIT-PIT yields, lower progressivity)
 - Tax effort accelerated in 2000s – including greater emphasis on direct taxes (figure)
 - tax/GDP up almost everywhere, but huge variations remain (low effort in Mexico, C. America, etc.)
 - Higher tax/GDP reduces macro instability, allow countercyclical fiscal policy, raise social expenditure
- Δ 2003–7 Δ tax/GDP moderately progressive (table)

Trend in Average Tax/GDP Ratio, 1973-2009, L.America



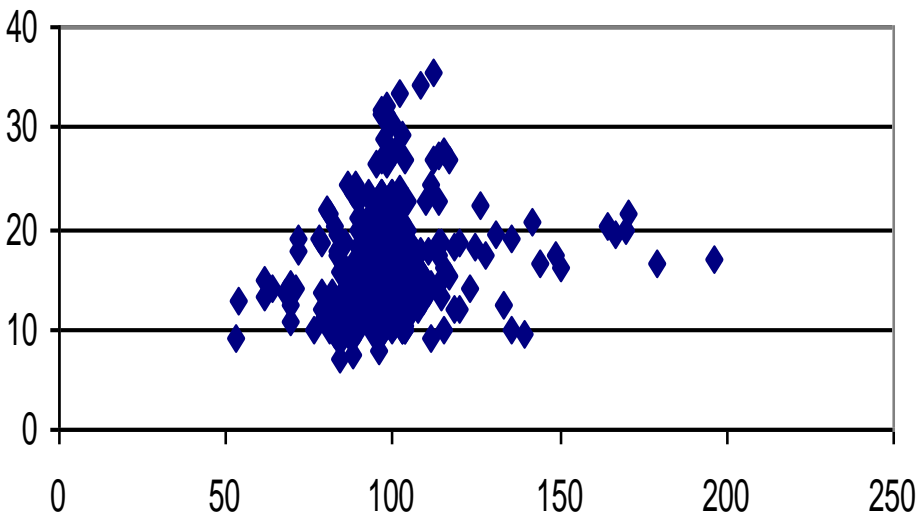
Source: Cornia, Gomez Sabaini and Martorano

General equilibrium effects:

Is the rise in tax revenue due to better terms of trade ?

B. International Terms of Trade (x-axis) vs. Tax Revenue/GDP (y-axis) of the 18 main L.A. countries, 1990 - 2007

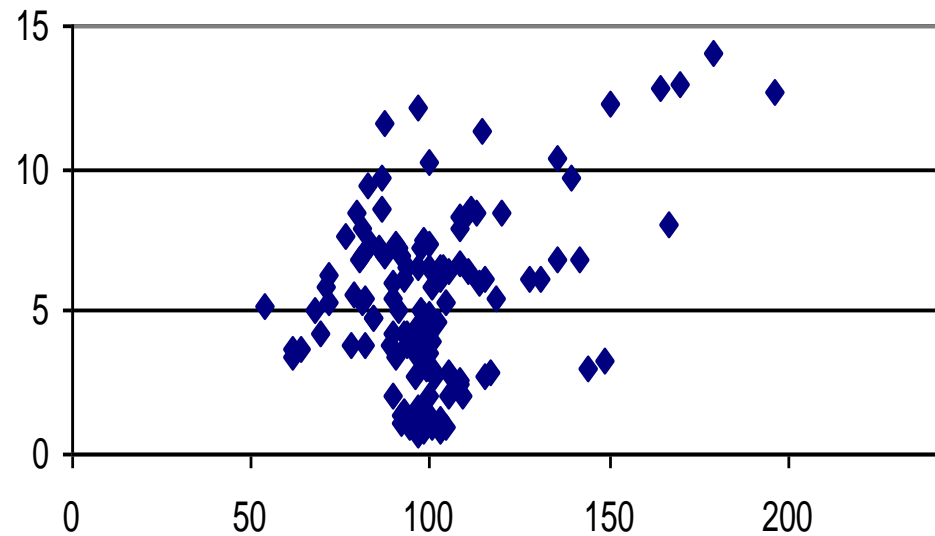
$r=0.18$ (0.05 for 2003-07)



All countries

D. International Terms of Trade (x-axis) vs. Non Tax Revenue/GDP (y-axis) of the 8 main commodity L.A. exporters, 1990-07

$r=0.39^{**}$ (0.63 for 2003-07)



Commodity exporters
(non tax revenue)

Taxation and direct effect on income inequality

REYNOLDS-SMOLENSKY Index (Gini points) for 1990S and 2000S

	1990s	2000s	2000s -1990s
Argentina	-1.95	1.92	3.87
Brazil	-0.70	1.40	2.10
Chile	-0.78	0.27	1.05
Costa Rica	-0.98	1.24	2.22
Ecuador	-0.70	0.70	1.40
El Salvador	-1.40	-0.75	0.65
Guatemala	-0.77	1.20	1.97
Honduras	-2.80	-0.10	2.70
Nicaragua	-5.20	0.17	5.37
Panama	0.00	0.90	0.90
Uruguay	-0.20	1.20	1.40

Note: A positive sign of the index indicates that the tax system is progressive, a negative one that it is regressive.

(d) Public social expenditure and redistribution of human capital

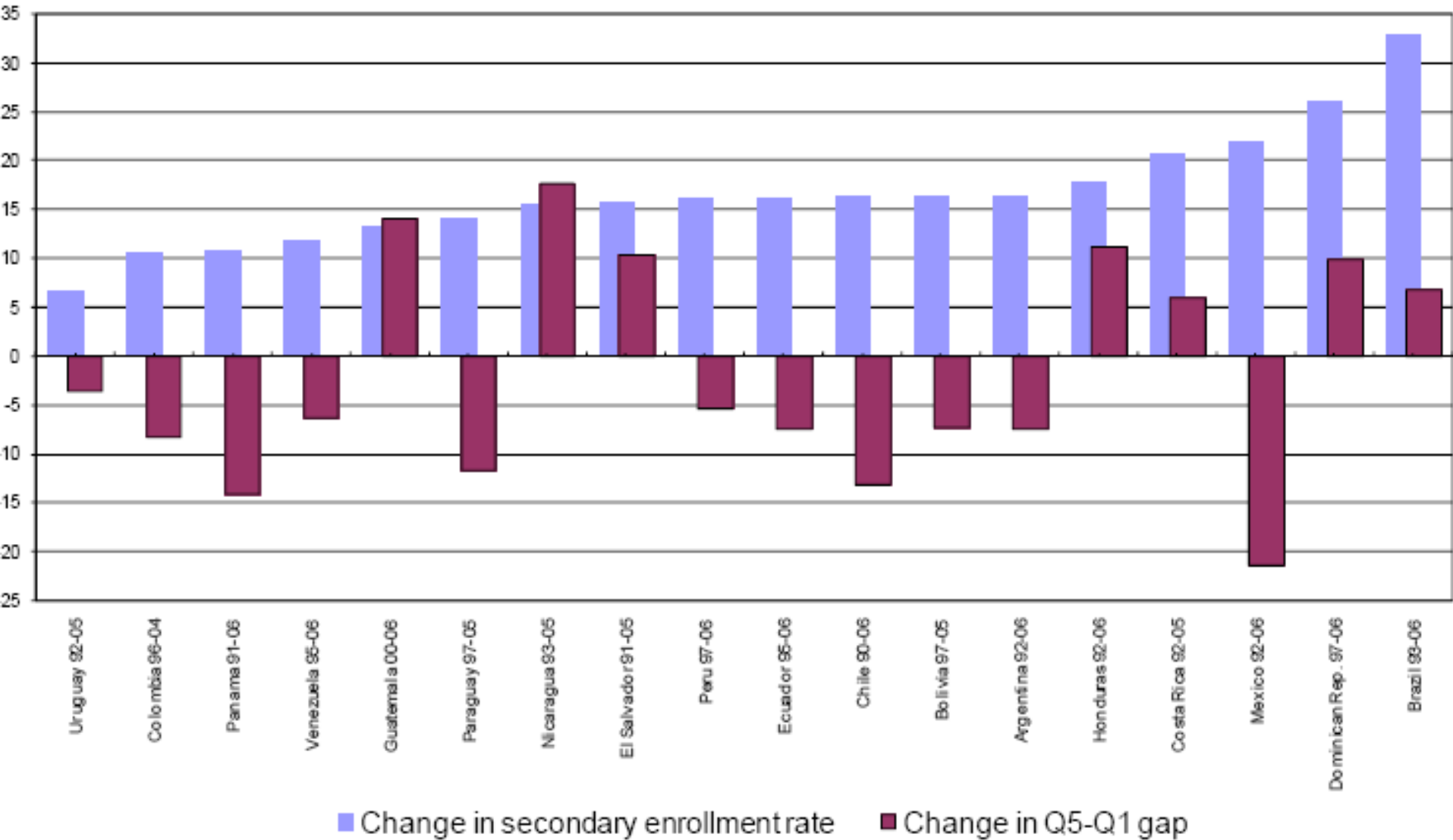
- Countries made big invest. in 2ary educ since 1990s **chart**
- Strong effect on income inequality, current and lagged
- Lower educational inequality → lower income inequality
- Problems persist in 3ary education (still unequalizing) **see later**

	1990	1995	2000	2010
Av. spending on education p/child 0-14 (\$dollars PPP)	320	511	756	1451
Public expenditure on educ/GDP	2.8	3.3	4.0	4.4

Decomposition of changes in public outlay in education per child 0-14 shows that **33% is due to social policy, 50.6% to GDP growth, 16.4 % to falling child cohorts**

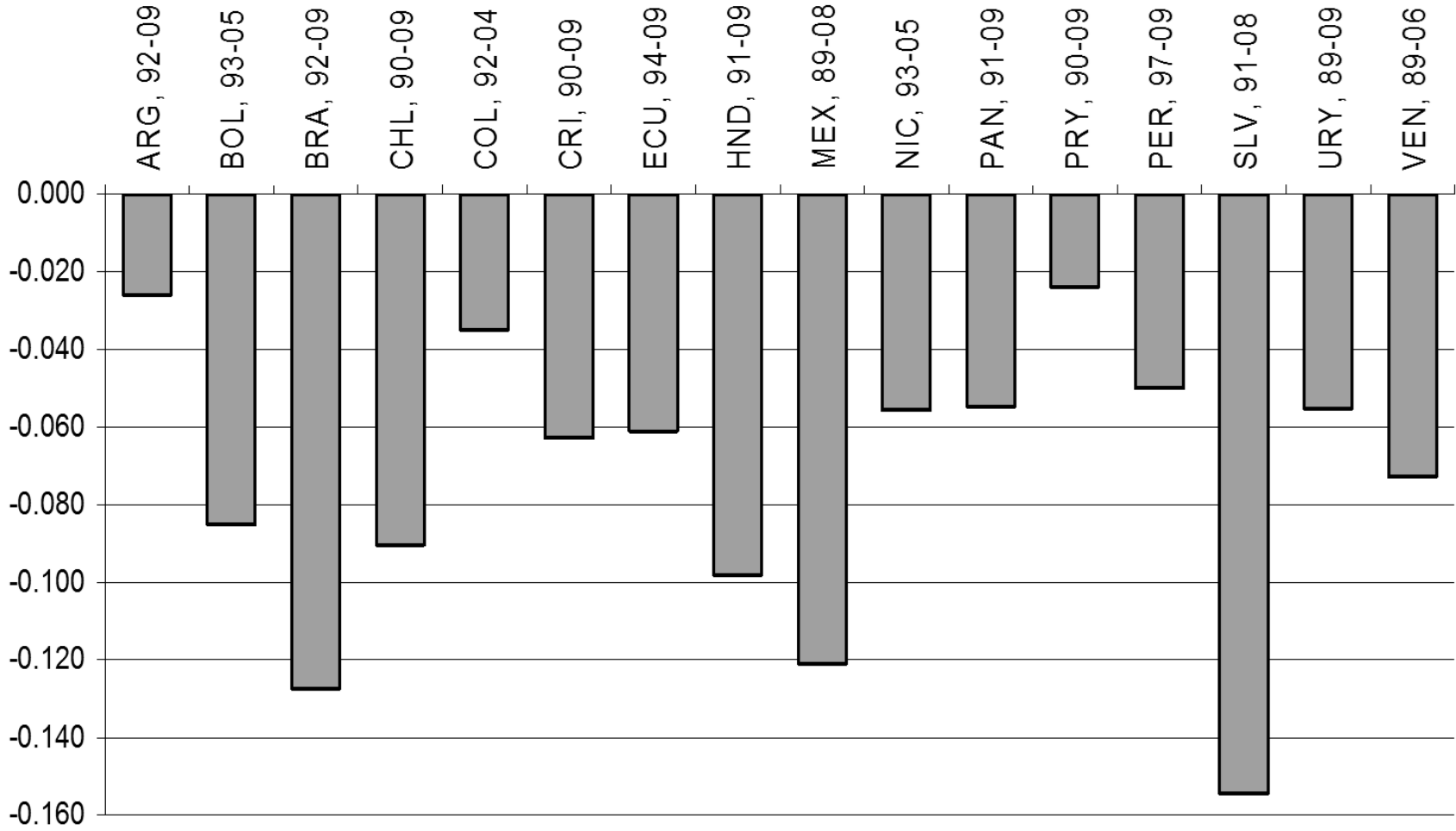
Enrollment

Secondary



Source: elaboration on SEDLAC and CEPAL data

+ public expenditure on educ → fall in Gini education

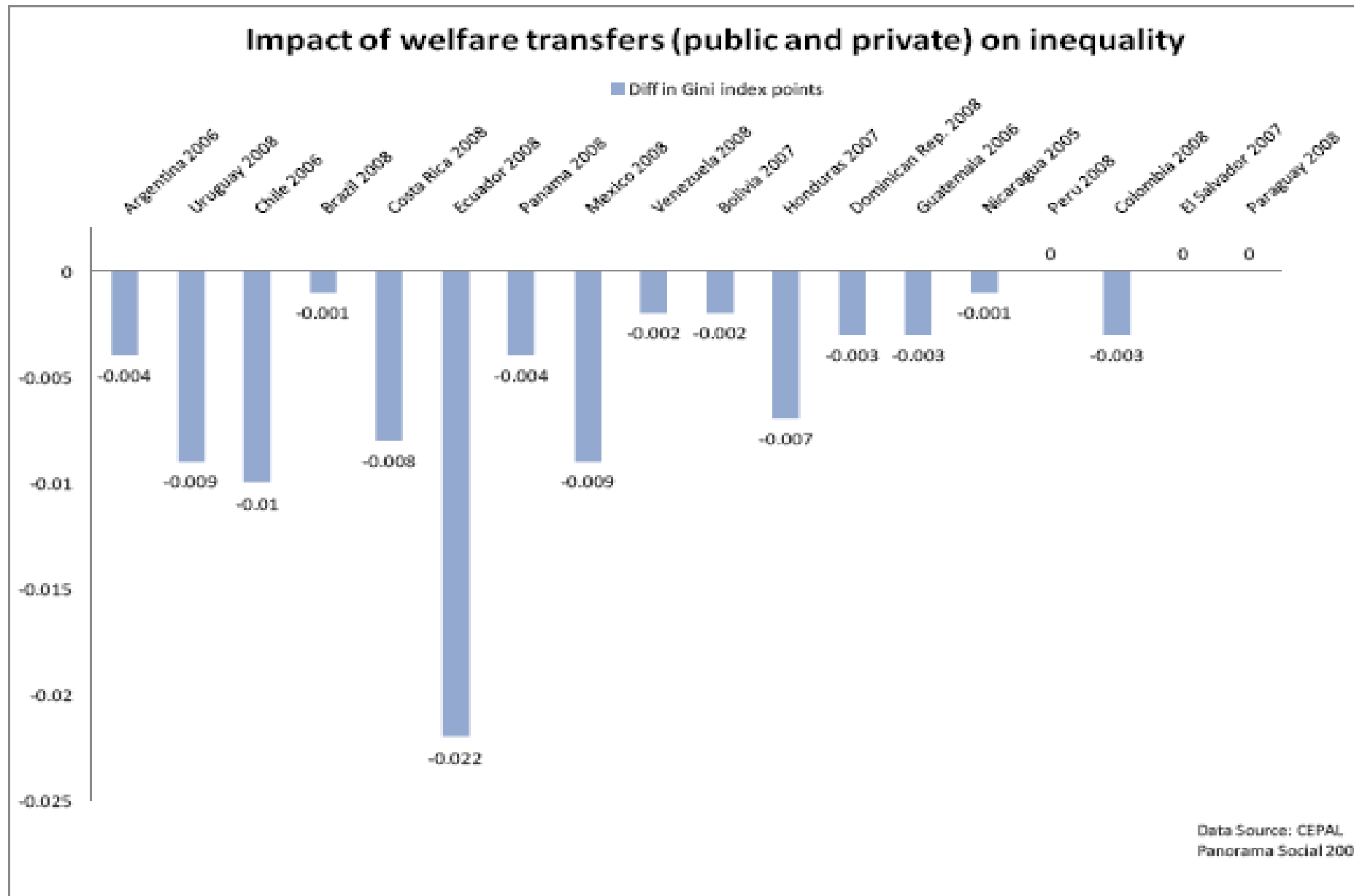


(e) Social assistance and income transfers

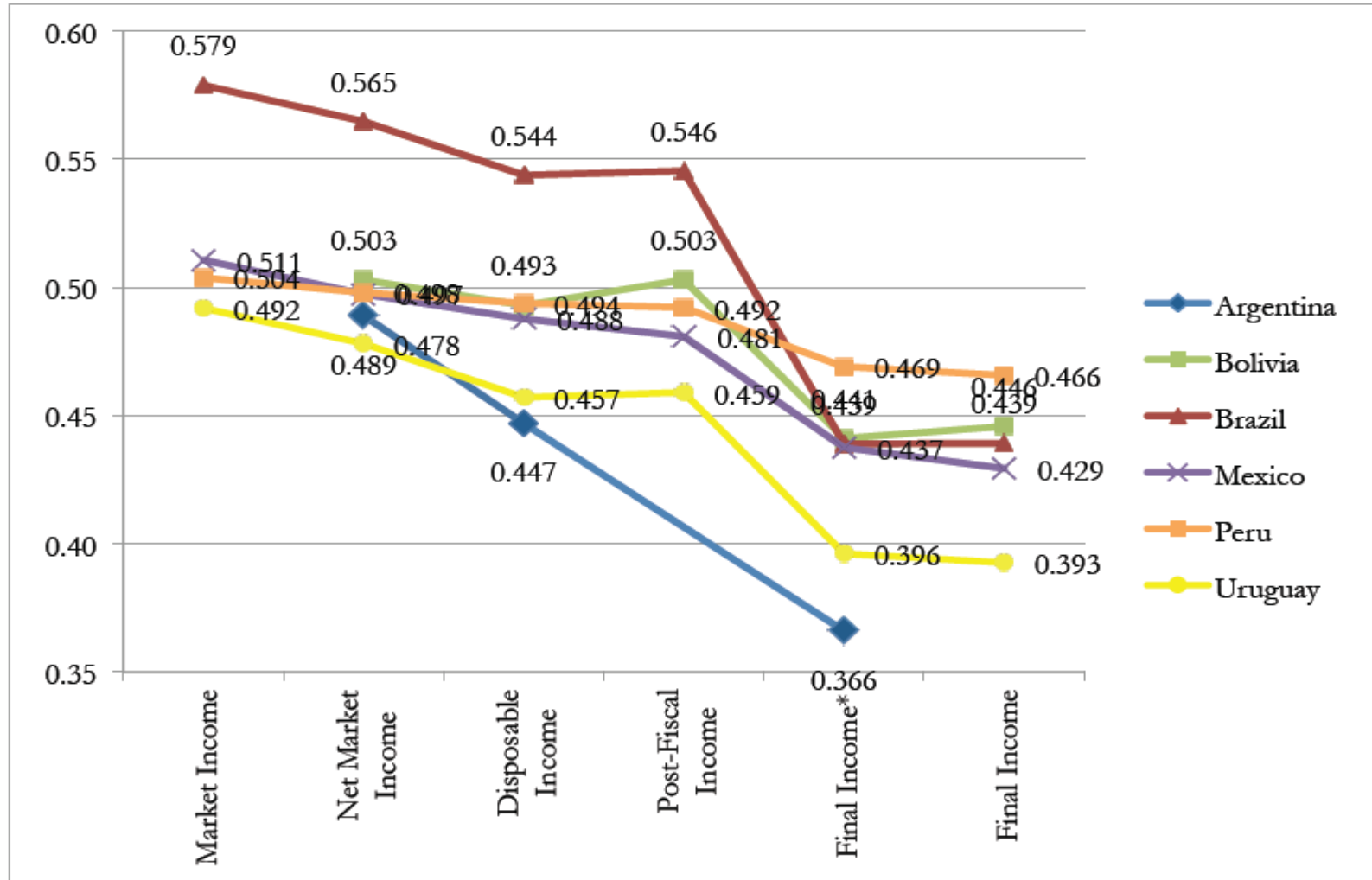
- extending coverage of **social insurance** to
 - people with few years of contributions (as in 1990s they worked in informal sector or were unemployed)
- Large increase in well targeted **social assistance**
 - CCT targeted anti poverty programmes (Argentina JJP, Brazil BE-BF, Chile, Uruguay, Mexico, ..(0.5-1.0% GDP)
 - Pure transfers e.g. non-contrib pensions (Argentina, Brazil, Chile, Bolivia, Uruguay, etc)
- Perceptible effect on income inequality despite low-ish spending (1/3 of the drop in Brazil according to Paes de Barros – true ???)

Does social assistance reduce inequality?

Disposable income with and without 'welfare' transfers: difference in Gini



e) Summing up: A pretty large impact of fiscal operations (taxation, transfers in cash-&-kind) in 6 LA countries, years 2008-2009-2010



Source: Lustig et al. (2013)

What the new policy model did not do

- Broader redistribution of assets/resources
 - Land redistribution (in Brazil, Paraguay, Bolivia, Guatemala) ...promised but not implemented
 - Mines//gas/oil fields (Bolivia is an exception) (but rents more taxed and better targeted)
 - Access to credit and finance for smallholders & SMEs
 - University education
- More aggressive industrial policy
- Broader power sharing
- Reduced dependence on foreign finance (à la East Asia)

- In fact, the new model illustrates a sort of ‘*social-democratization of LA*’ (à la Redistribution with Growth of Chenery et al 1975)

- It is ‘*not a radical paradigm shift*’, needs to be deepened

3. Regression analysis on underlying causes of inequality decline

- Three estimators used (LSDV, 3SLS, GMM) → consistent results
- -----
- **gains in terms of trade** have been equalizing on average, but un-equalizing where economy is dominated by a capital-intensive extractive sector
- **migrant remittances** not significant, except where they are $> 10\%$ of GDP
- **FDI** are un-equalizing on average but particularly in the Andean countries
- -----
- **GDP/c growth** (if in traded/labour-intensive sector) is modestly equalizing.
- -----
- **increase in human capital formation**, & its more egalitarian distribution raised supply of skilled workers and reduced skill premium and inequality

Continued

- **RER** (main macro policy tool used in regression) is equalizing, though in 2000s its benefits were limited due to pressure on RER appreciation
- Drop in **tariff rate** is unequalizing if accompanied by a rise in the skill premium,
- **Tax rises** were equalizing but modestly
- **Rise in the minimum wage** cuts Gini sizeably
- **public expenditure on social security/GDP** (had no data on social assistance/GDP) is equalizing
- -----
- **quality of democracy** affects inequality favourably, beyond the adoption of the above policy instruments

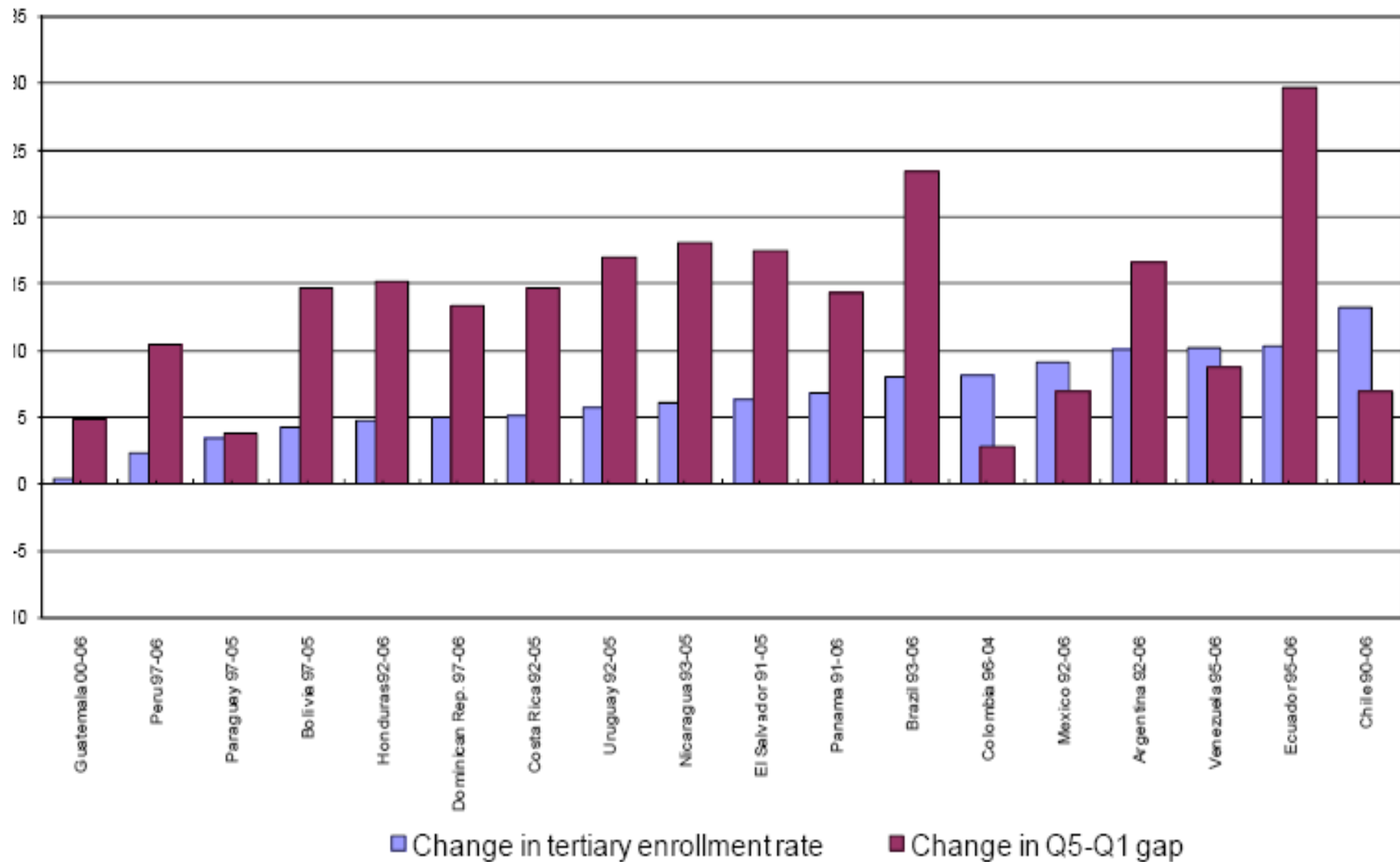
Variables	Signs expected		LSDV	3SLS	GMM
			Model 7	Model 8	Model 9
Terms of trade index	+/-		-0.0007	0.0004	-0.0104***
Remittances/GDP	+/-		-0.0448	-0.044	-0.0431
FDI stock/ GDP	+		0.0960***	0.0949***	0.0353***
GDP/c growth rate	-		-0.0447	-0.1364*	-0.0402*
Dependency ratio (growth rate)	-		-0.3682	-0.2945	-0.2021
Labor force participation (gr. rate)	+/-		-0.0089	0.0304	0.0247
People with 3ary and 2ary educ/people with no or 1ary edu	-		-1.8689***	-1.7658**	-0.9085*
Direct/indirect taxes	-		-2.0464***	-1.8337***	-0.5307*
Public expend. on social security/GDP)	-		-0.3802***	-0.4009***	-0.1643*
Real eff. exchange rate	-		-0.0844***	-0.0932***	-0.0233*
Real eff. exchange rate ^ 2	+		0.0003***	0.0004***	0.0001*
Minimum wage index *share of formal workers	-		-0.0266***	-0.0201**	-0.0109**
Social democratic dummy	-		-0.7926**	-0.8570**	-0.3746*
Radical populist dummy	-		-3.2456***	-2.9162***	-1.6840***
Polity2 index	-		-0.4831***	-0.4545***	-0.1740***
Gini coefficient of disposable income (t-1)	+				0.6375***

4. Challenges to further reduce inequality

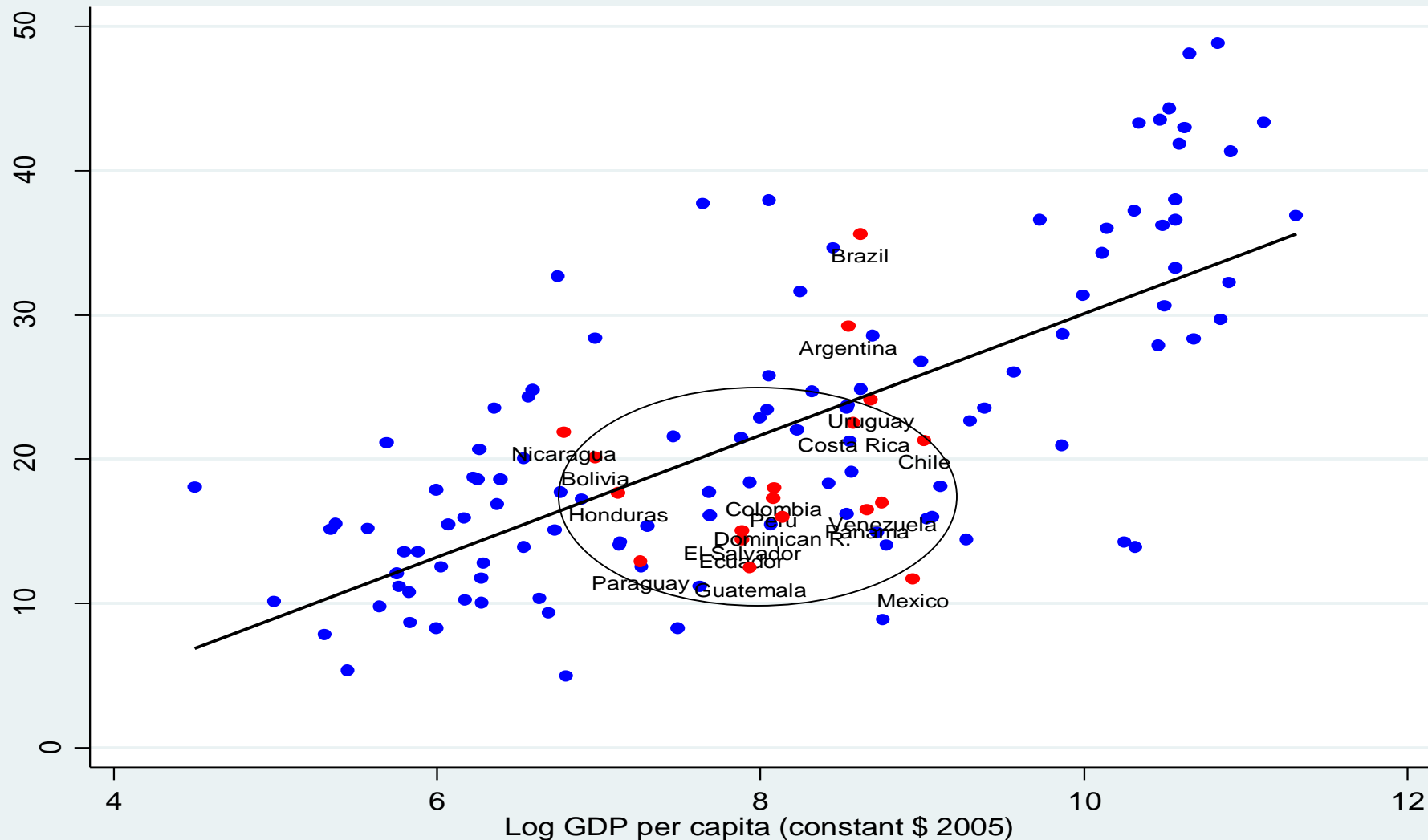
- Structural reforms
 - Access to assets- endowments (land, etc.) in several countries
 - Lower dependence on foreign finance
 - Avoid re-primarization of X with ‘open economy industrial policy’
- Sustain a prudent macroeconomic policy – avoid temptations of populism
- Deepen social-democratic reforms ? (but be careful of their costs...)
 - Different quality of 2ary educ → bias access to 3ary education of the poor (**chart**)
 - Broaden access to university education
 - Further human capital accumulation (health) and public goods (infrastructure)
 - To finance all this, continue efforts at tax collection in much of region (**chart**)
 - In Argentina, Brazil etc. tax/GDP is high, better targeting of public expenditure. (much of the redistribution comes – also in OECD – from the expenditure side) (**last table**)

Enrollment

Tertiary



Relation between Tax Revenue and lg GDP/c in 2007 around the world: Many Latinos remain below 'international norm' (computed by regression)



Source: Martorano (2010) on Regional Commissions data

Redistributive effects of further changes in tax structure

Regression analysis of determinants of Reynolds-Smolensky index

Variables expressed as a share of GDP

	1	2	3
Direct tax	0.0122***	0.0094**	0.0095**
Indirect taxes	-0.0062		
Trade taxes	-0.0149***	-0.0110**	-0.0100*
General indirect taxes		-0.0009	-0.0008
Selective indirect taxes		-0.0087*	-0.0090*
Social security contributions			0.0027
Constant	-0.0492*	-0.0482*	-0.0516*
Observations	36	36	36
R-squared	0.42	0.44	0.41

Source: Cornia, Gomez Sabaini and Martorano 2014

The above regression suggests that:

- Raising direct tax/GDP by 1 pt reduces Gini by 0.9-1.2 pts
- Cutting selective ind.taxes (excises) by 1 point reduces Gini by 0.9 points

Redistributive effects of taxes and transfers in selected groups of countries

Country	Year	Gini coefficient of disposable per capita household income		Changes in Gini coefficients due to fiscal operations			
		Before	After taxes and transfers	Total	Due to Taxation	Due to Transfers	% of total Gini decline due to transfers
Belgium	2000	0.542	0.279	0.263	0.063	0.201	76
Germany	2004	0.489	0.278	0.210	0.052	0.158	75
Sweden	2005	0.442	0.237	0.205	0.037	0.168	82
Switzerland	2004	0.395	0.268	0.128	-0.003	0.130	101
United States	2004	0.482	0.372	0.109	0.043	0.066	60
Average Advanced				0.170	0.033	0.137	80.0
Czech Republic	2004	0.468	0.267	0.201	0.038	0.163	81
Estonia	2004	0.493	0.340	0.153	0.034	0.120	78
Poland	2004	0.527	0.320	0.207	0.005	0.202	98
Average E.Europe				0.164	0.022	0.142	86.0
Israel	2005	0.491	0.370	0.121	0.045	0.076	62
Korea	2006	0.334	0.311	0.023	0.006	0.017	74
Taiwan	2005	0.324	0.305	0.019	0.003	0.016	84
Average emerging				0.054	0.018	0.036	73.0
Argentina	2006	0.589	0.479	0.110	0.019	0.091	83
Brazil	2006	0.570	0.486	0.084	0.014	0.070	83
Colombia	2004	0.568	0.562	0.006	-0.001	0.006	100
Guatemala	2006	0.521	0.507	0.014	0.012	0.002	14
Uruguay	2004-06	0.542	0.428	0.124	0.010	0.114	92
Average L. America				0.065	0.010	0.055	85.0

Source: Cornia, Gomez Sabaini and Martorano (2012) on Centrangolo and Gómez-Sabaini (2006), OECD, IMF, IDLA and literature