GENDER AND MOBILITY: GATSBY IN THE AMERICAS

Sumaya Ali Brahim

Colegio de Tlaxcala and CIPS

Norma Fuentes,

CCNY Colin Powell & CIPS

Darryl McLeod

Fordham Economics and CIPS

Social Mobility in the Americas

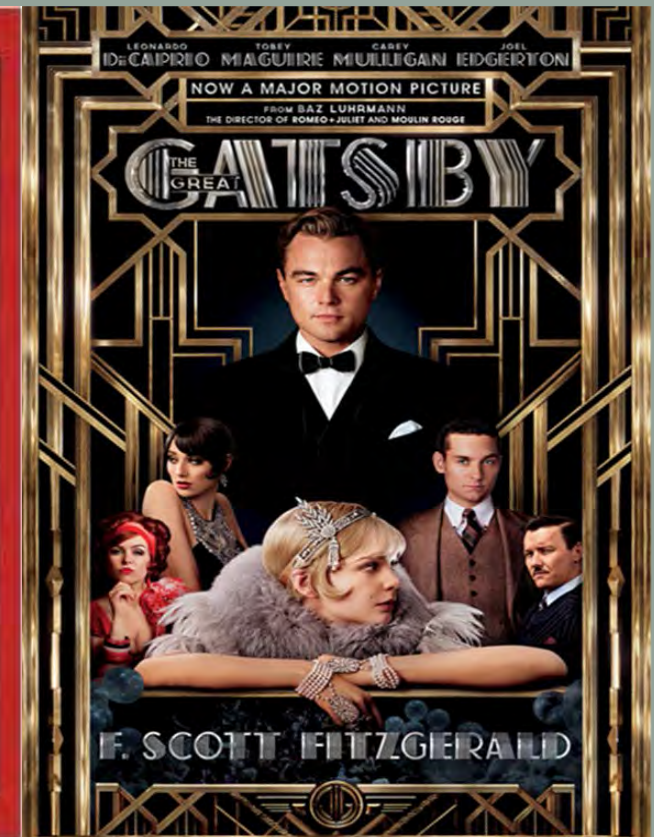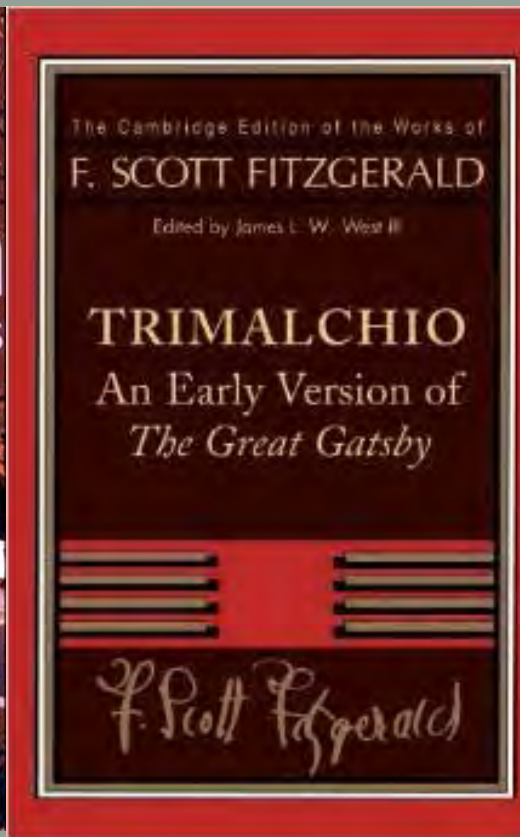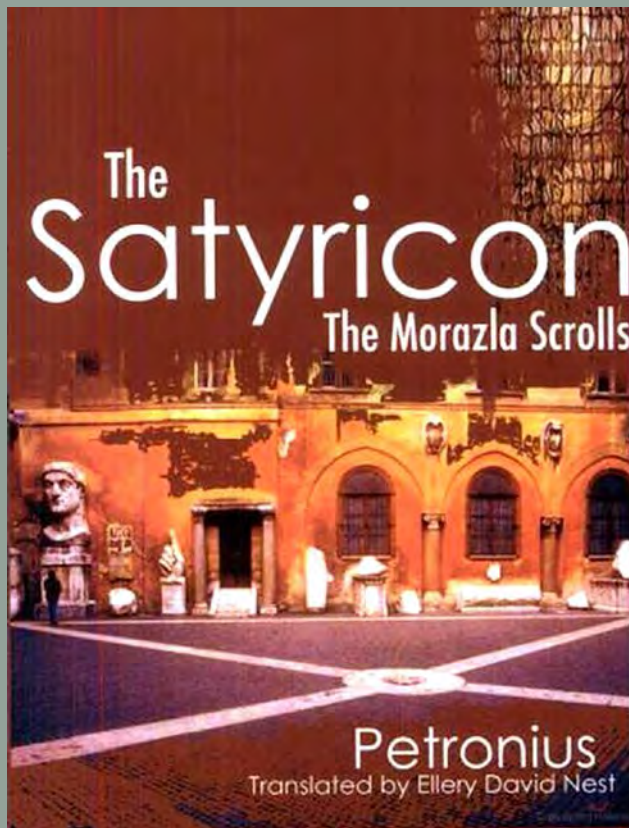Espinosa Yglesias Research Centre &
Stanford Center on Poverty and Inequality
April 24th 2015

Gatsby in the Americas…

TRIMALCHIO IN THE AMERICAS?

A conundrum and a challenge…

- As Torche (2015) points out *"mobility has not changed much in the United States over the last few decades, despite growing inequality. These dual findings pose a **conundrum and challenge us to further understand** the relationship between inequality and mobility"*

- *In the USA (OECD) the Gatsby curve works between countries & states/cities, **but not over time..?***

- Building on Conconi, Cruces, Oliveri, and Sanchéz** 2008 Ali Brahim & McLeod (2015) show the Gatsby curve is working over time & across countries in Latin America…

- *The question is why?*

- ** "E pur si move? Movilidad, pobreza y desigualdad en América Latina

Meeting the challenge…

- ***The Gatsby curve for the most part is working in Latin America…*** (at least for the LA-7 minus Colombia…)

- ***Why in Latin America*** but not North America (except Mexico)? Ali Brahim, Fuentes and McLeod, 2015 explore three hypotheses:
    1. ***Mobility and inequality are converging*** "Todos Somos Americanos" (President Obama in his Cuba speech")
    2. ***LatAm social policies more effective*** in increasing mobility and reducing inequality, conditional cash transfers, etc.
    3. LatAm made progress in reducing ***racial and gender disparities (World Bank, 2012)*** the U.S. less during the past 20 years….

Meeting the challenge…

- *Ali Brahim and McLeod, 2015 show that the Gatsby curve works within and between Latin American Countries*… (at least for the LA-7 minus Colombia…)

- ***Why in Latin America*** but not North America (except Mexico)? We explore three hypotheses:

    1. ***Convergence:*** *mobility and inequality very low/high in Latin America and* "*Todos Somos Americanos*"

    2. ***LatAm Social policy more effective*** in increasing mobility and reducing inequality, conditional cash transfers, etc.

    3. Progress in ***reducing racial and gender disparities***, the U.S. did this already or has done less recently (see Tienda & Fuentes, 2014 immigrants, race and inequality in U.S. cities….

key findings…

1. Use the CEDLAS-SEDLAC Social Mobility (SMI) index published data 16 countries sampled over 3 year intervals from 1980 to 2012 (more or less)

2. **How inequality falls matters**, shared prosperity helps but top shares not relevant (" half a Palma") confirms Chetty et al. 2014 wealthy do not matter… share of bottom 40% does

3. **Standard Solon 2014 mobility model works** in Latin America, but only for women (Mincer coefficient reduces mobility, public spending & CCTs raise mobility and reduce inequality

4. **Household structure matters** (share of female headed households) but have opposite effects in LatAm and U.S. in LatAm more FHH associated with higher mobility…

5. Still mobility skeptic Duade (2012,2013) wonders whether **better distribution of bad education matters**…

Antecedents…Conconi, Adriana Guillermo Cruces,Sergio Olivieri Y Raúl Sánchez (2008) E Pur Si Muove? Movilidad, Pobreza Y Desigualdad En América Latina, Económica, La Plata, Vol. LIV, Nro. 1-2

SMI
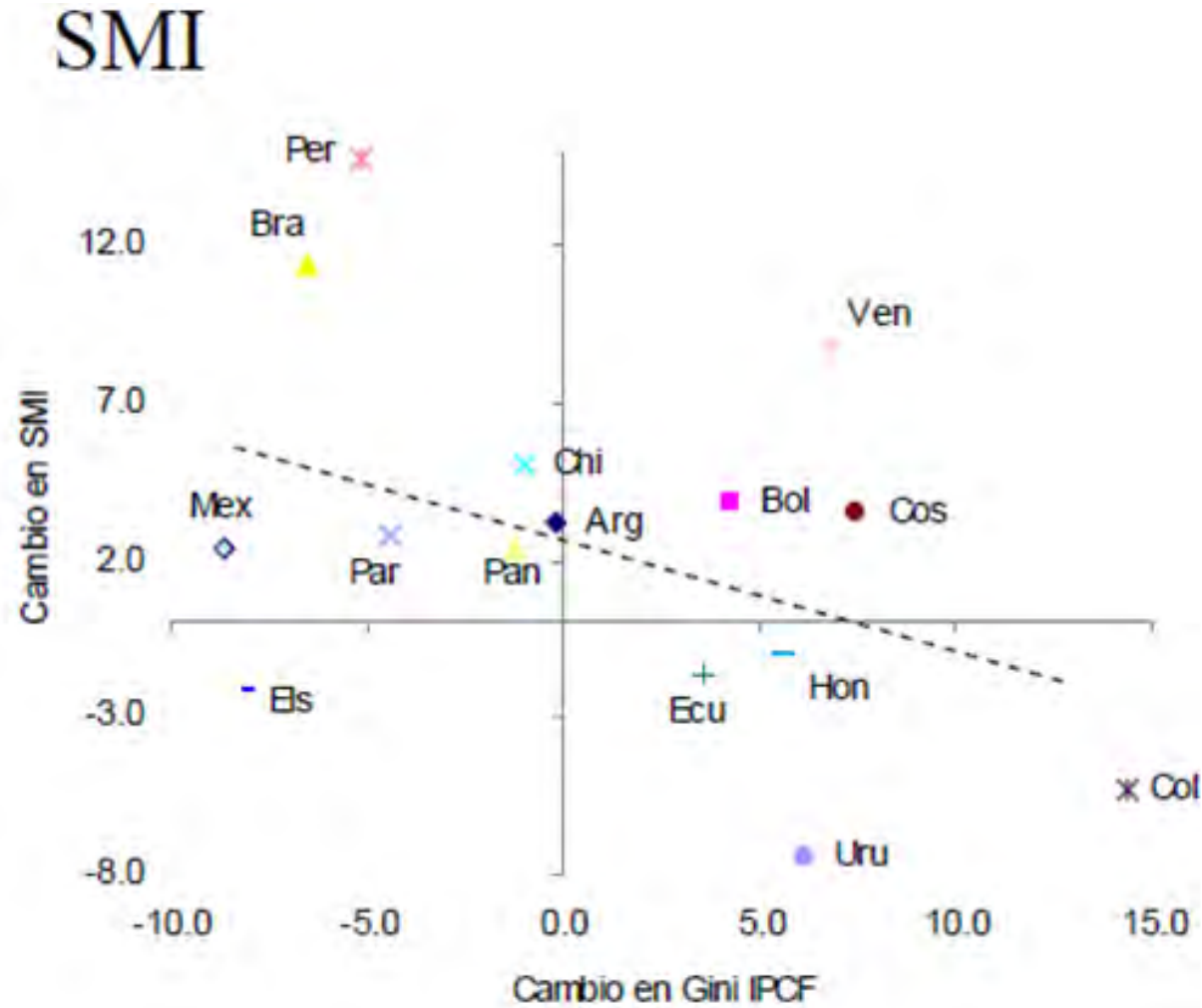
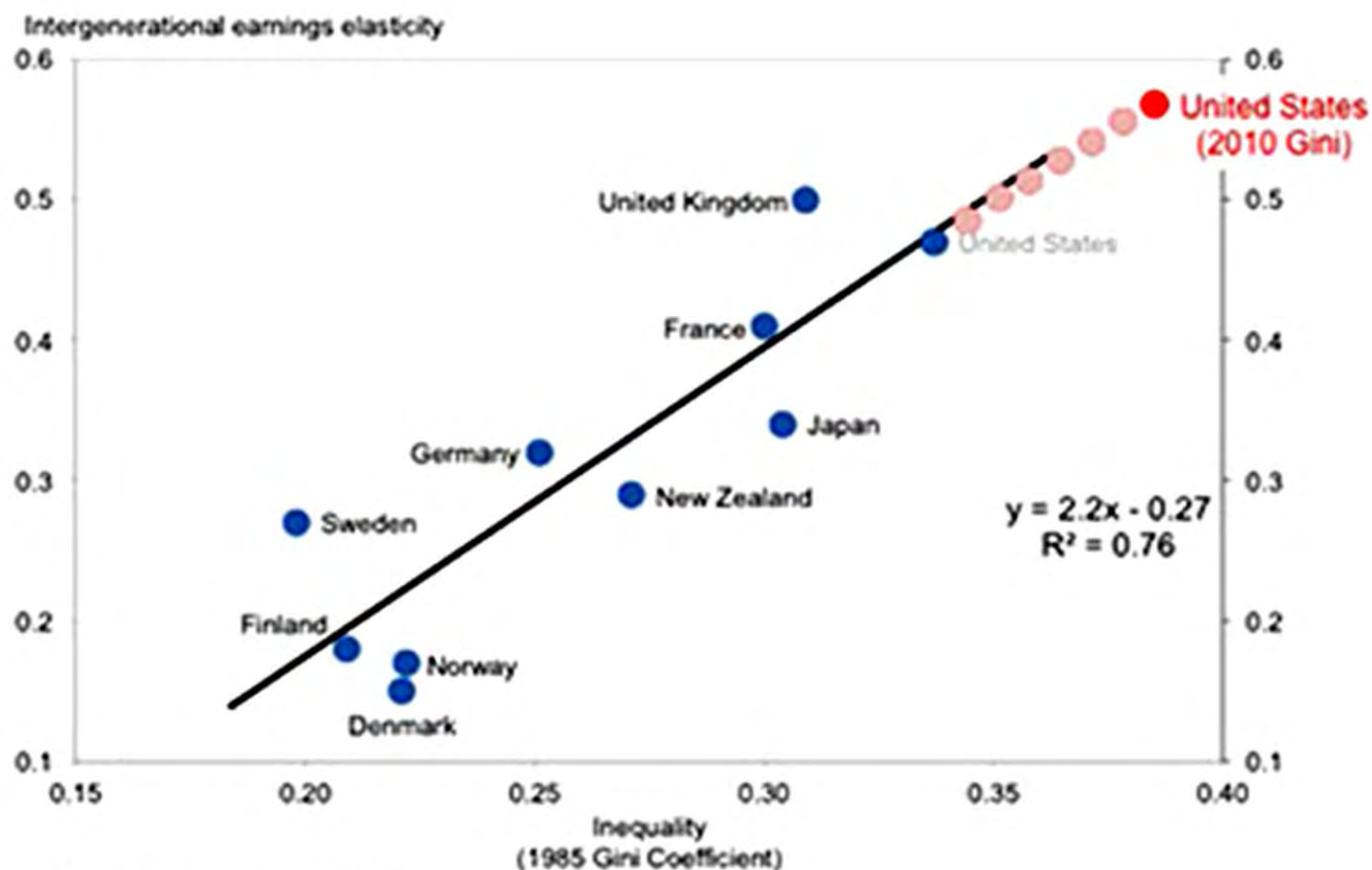# THE GREAT GATSBY CURVE

High Inequality is Associated With Less Economic Mobility

Alan Krueger's & Roll Hall of Fame forecast

Source: Corak (2011), OECD, CEA estimates

Corak, 2011 expected U.S. mobility to fall

The Great Gatsby Curve
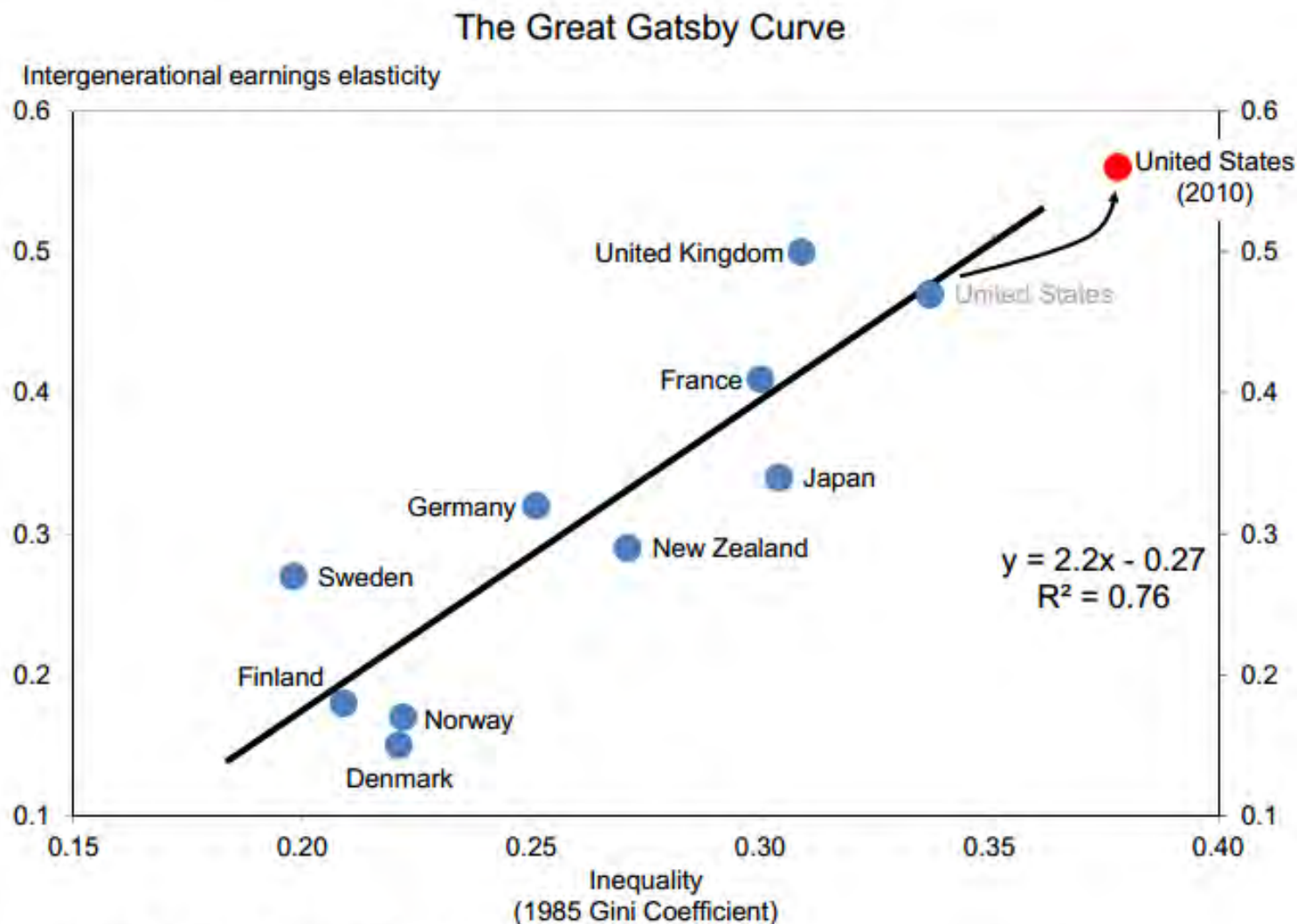
Source: Corak (2011), OECD, CEA estimates

But U.S. Mobility surprisingly stable over time (or rising?)

(see Chetty et al. 2014)
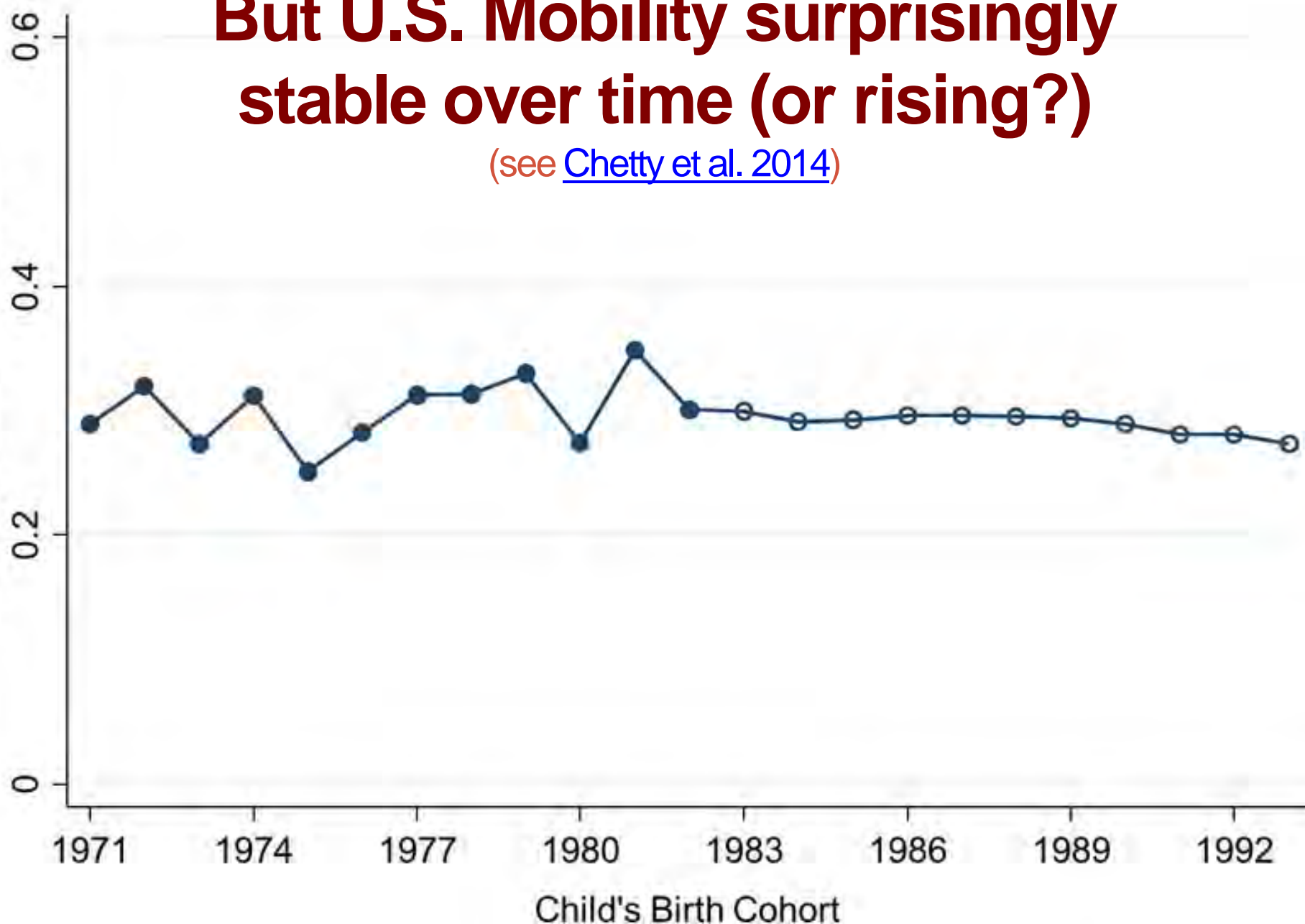
Geography
Mobility Varies Substantially Across Places…
Mobility varies across the US

| 52.4 - 65.0 |
| 48.9 - 52.4 |
| 46.3 - 48.9 |
| 44.7 - 46.3 |
| 43.6 - 44.7 |
| 42.2 - 43.6 |
| 40.8 - 42.2 |
| 39.2 - 40.8 |
| 37.4 - 39.2 |
| 26.0 - 37.4 |
| Insufficient Data |

Source: Chetty et al. (2014) http://www.equality-of-opportunity.org/
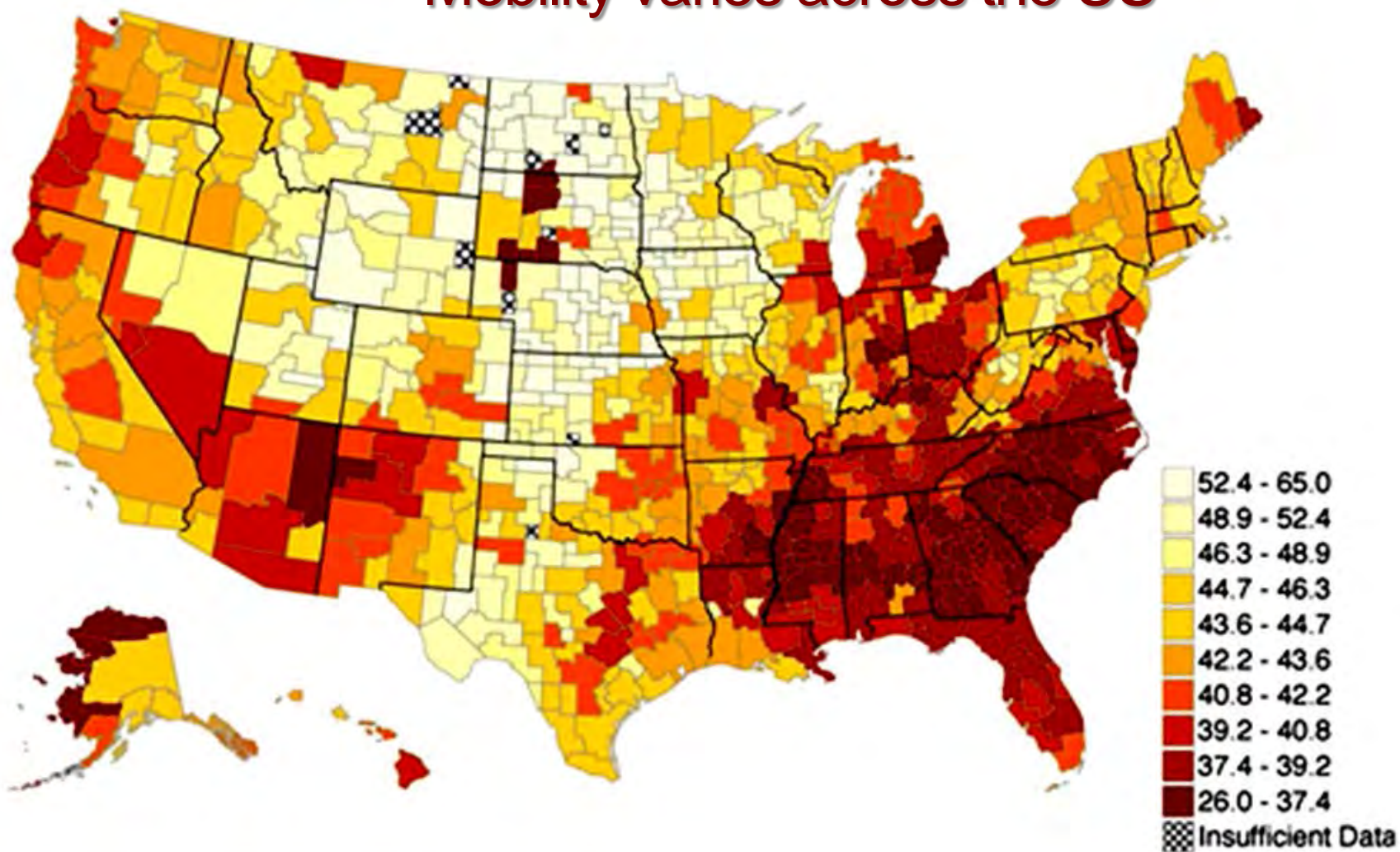
Figure 5: U.S Gini coefficient rises from .40 to .48 1970 to 2012
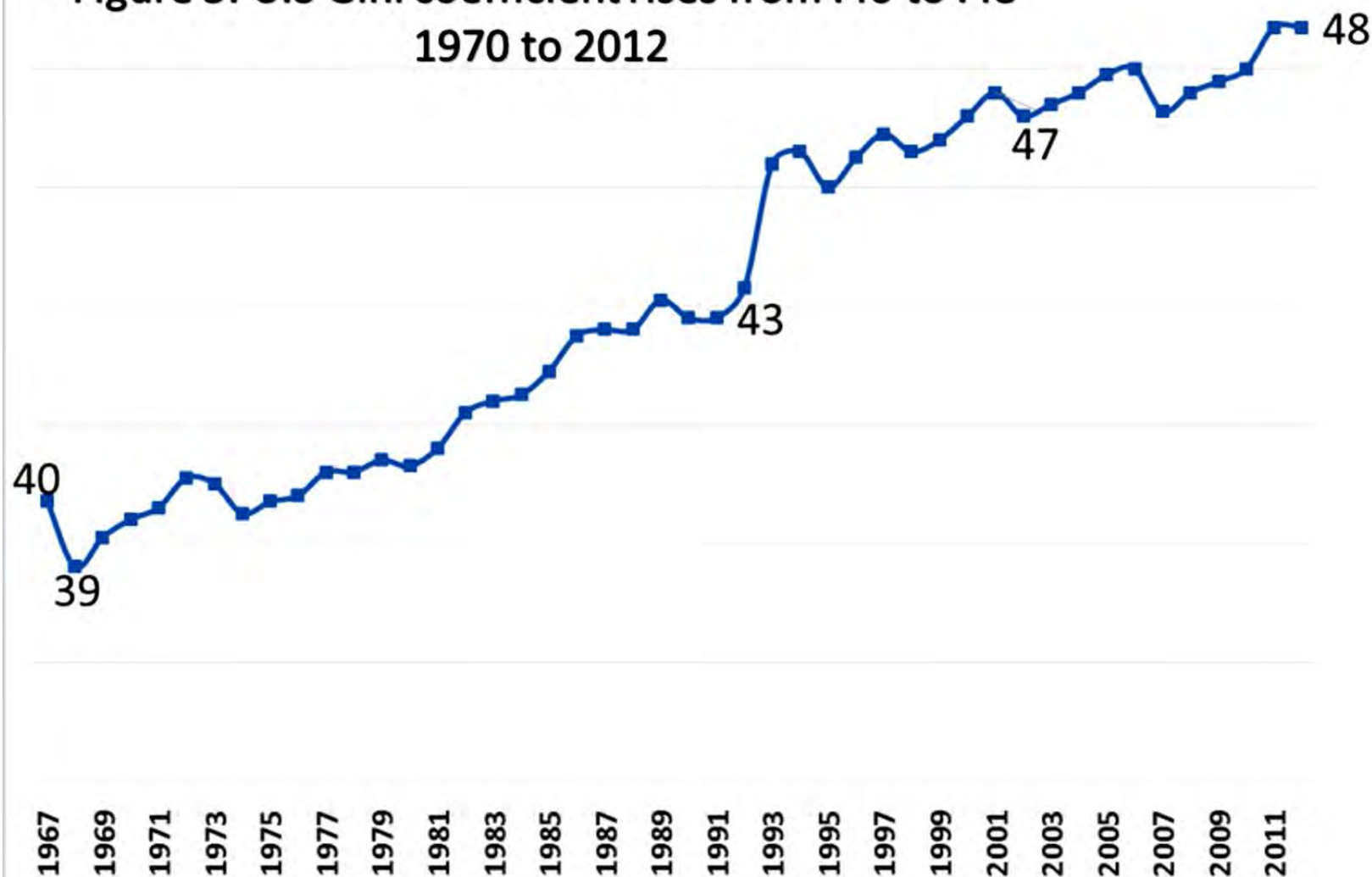
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/prod/techdoc/cps/cpsmar13.pdf[PDF

Piketty share of top 10%/1% does not matter

Figure I.1. Income inequality in the United States, 1910-2010
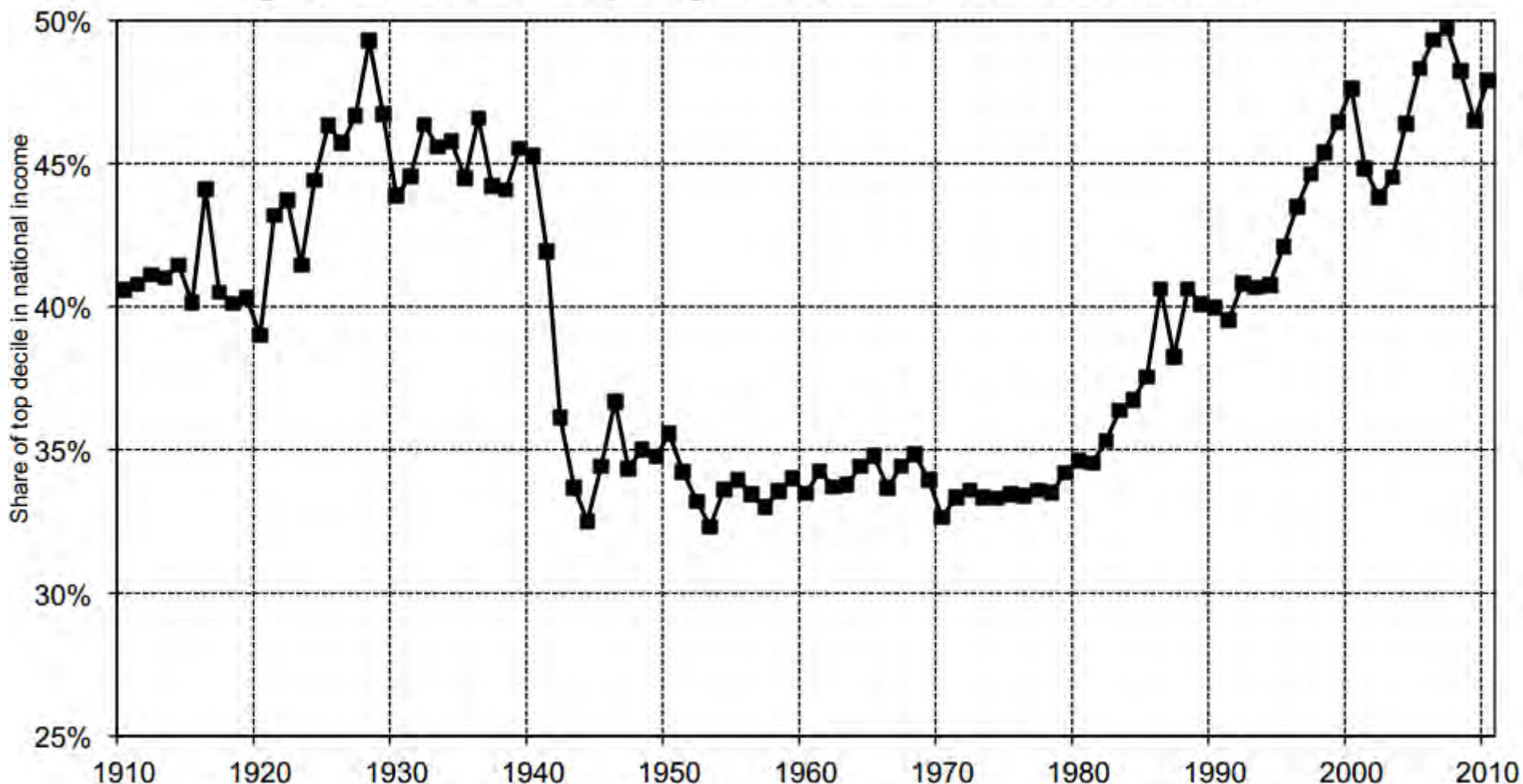
The top decile share in U.S. national income dropped from 45-50% in the 1910s-1920s to less than 35% in the 1950s (this is the fall documented by Kuznets); it then rose from less than 35% in the 1970s to 45-50% in the 2000s-2010s. Sources and series: see piketty.pse.ens.fr/capital21c.

Figure 3. Probability of Reaching Top Quintile at Age 26 by Birth Cohort
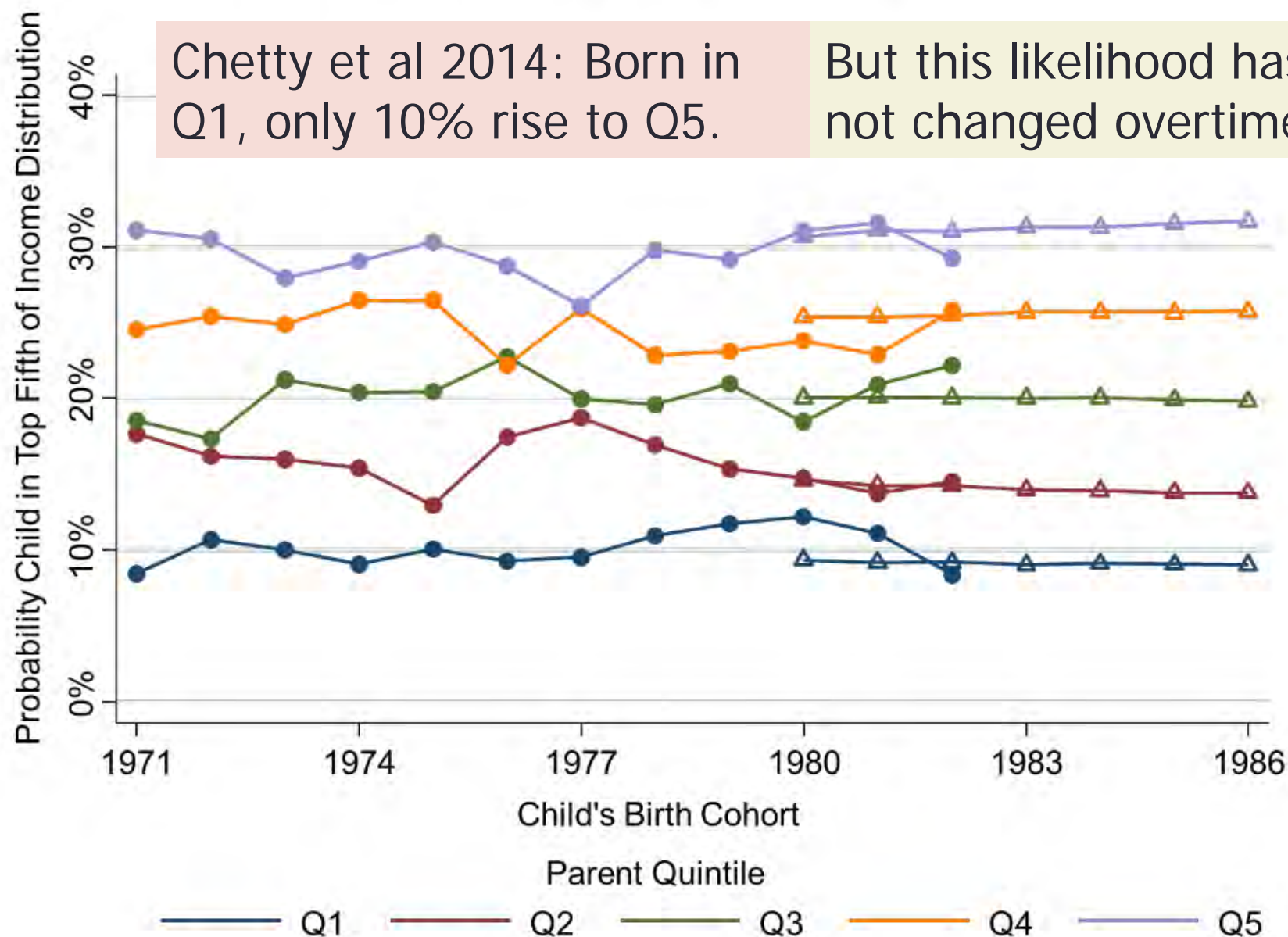
Chetty et al 2014: Born in Q1, only 10% rise to Q5.

But this likelihood has not changed overtime

Figure 2. Great Gatsby Curve: Gini Income vs Mobility (youths 13-19), 16 LatAm ctrys 1995 and 2011.

Convergence: "todos somos Americanos"…(TSA)

Figure 1A Latin America and U.S. Income Gini's Converge
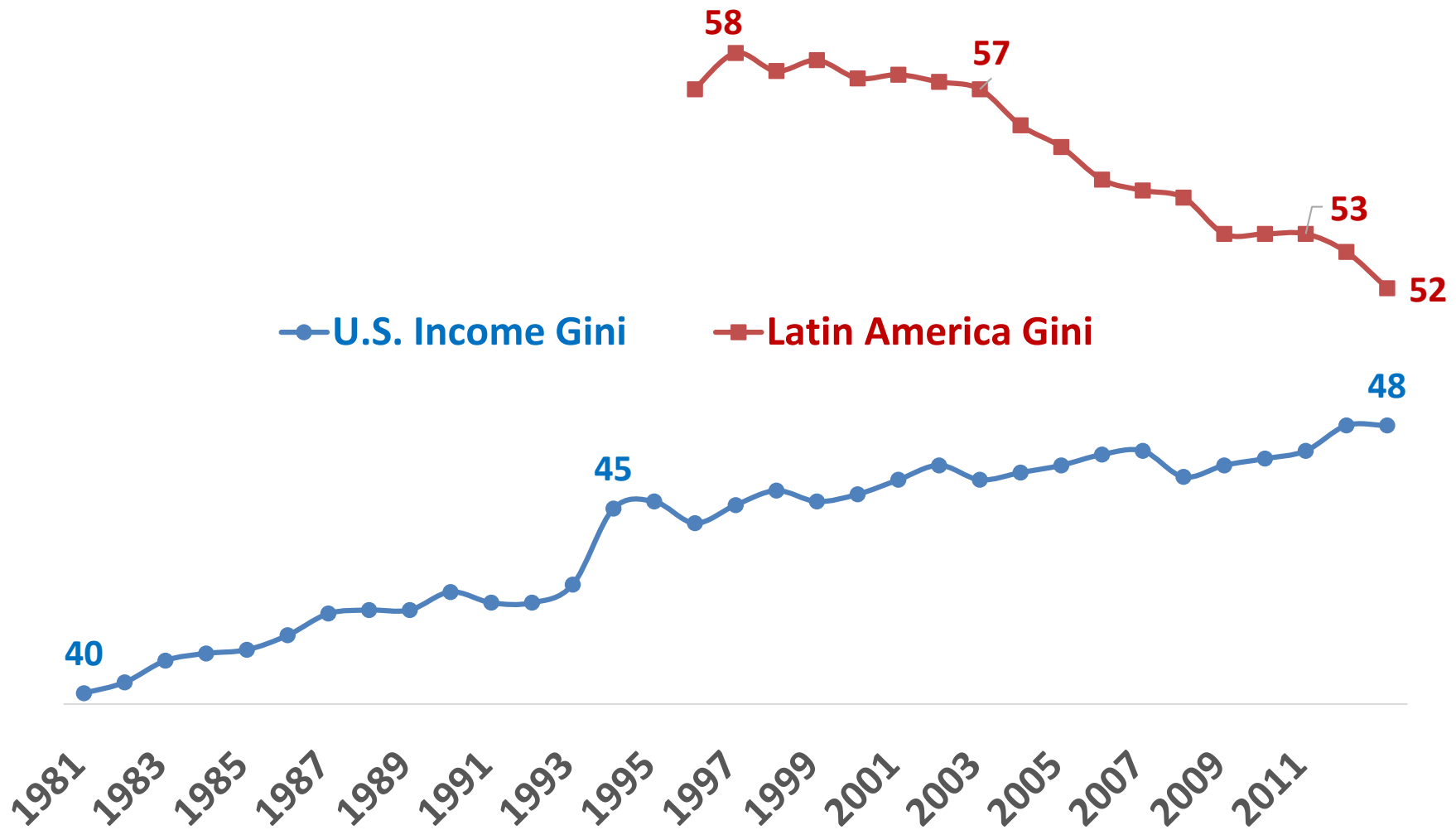
Figure 12: For LA-4 Inter Generational Mobility increased before Gini began to fall
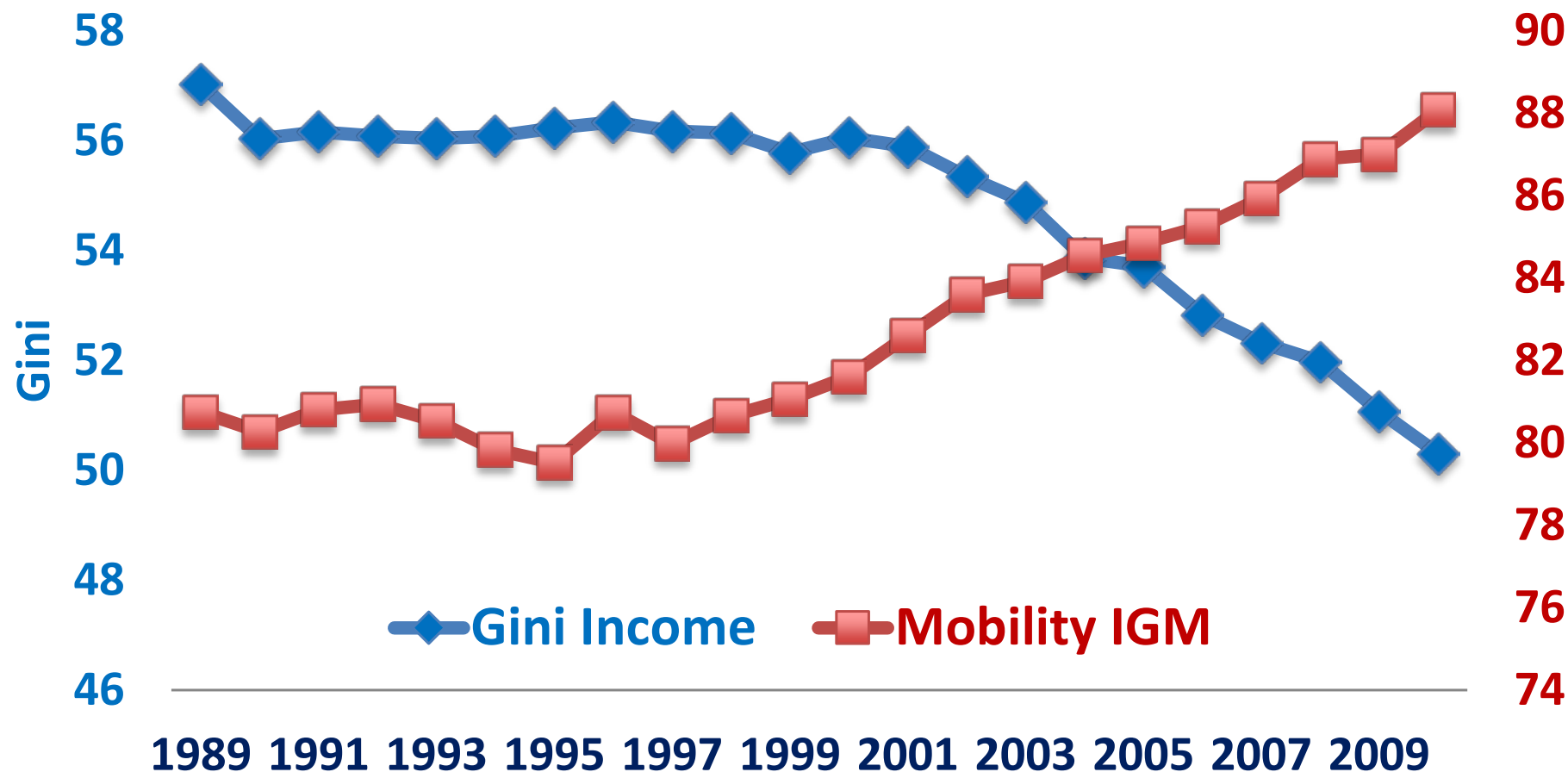
Source: (Argentina, Brazil Chile and Mexico, Population Weighted) CEDLAS SEDLAC and the World Bank

Gender convergence: LatAm closes old & opens new gender gap… starting with 1968 cohort, Latin women acquire more education than men (Nopo, 2012)

	Year	Females 21-30		Males 21-30		Ratio F/M	
		Yrs Educ	change	Yrs Educ	Change	Level	Change
Argentina	2011	12.4	2.5	11.6	1.6	107	159
Brazil	2009	9.8	4.1	9.2	3.5	107	118
Chile	2009	12.6	2.5	12.4	2.4	102	105
Mexico	2010	10.4	2.5	10.3	1.5	101	171

Source: CEDLAS/SEDLAC Ecucation and Gender Statistics

Figure 1: Mean Years of Schooling
25 to 64 Population (1960-2009)

Female   Male   Population
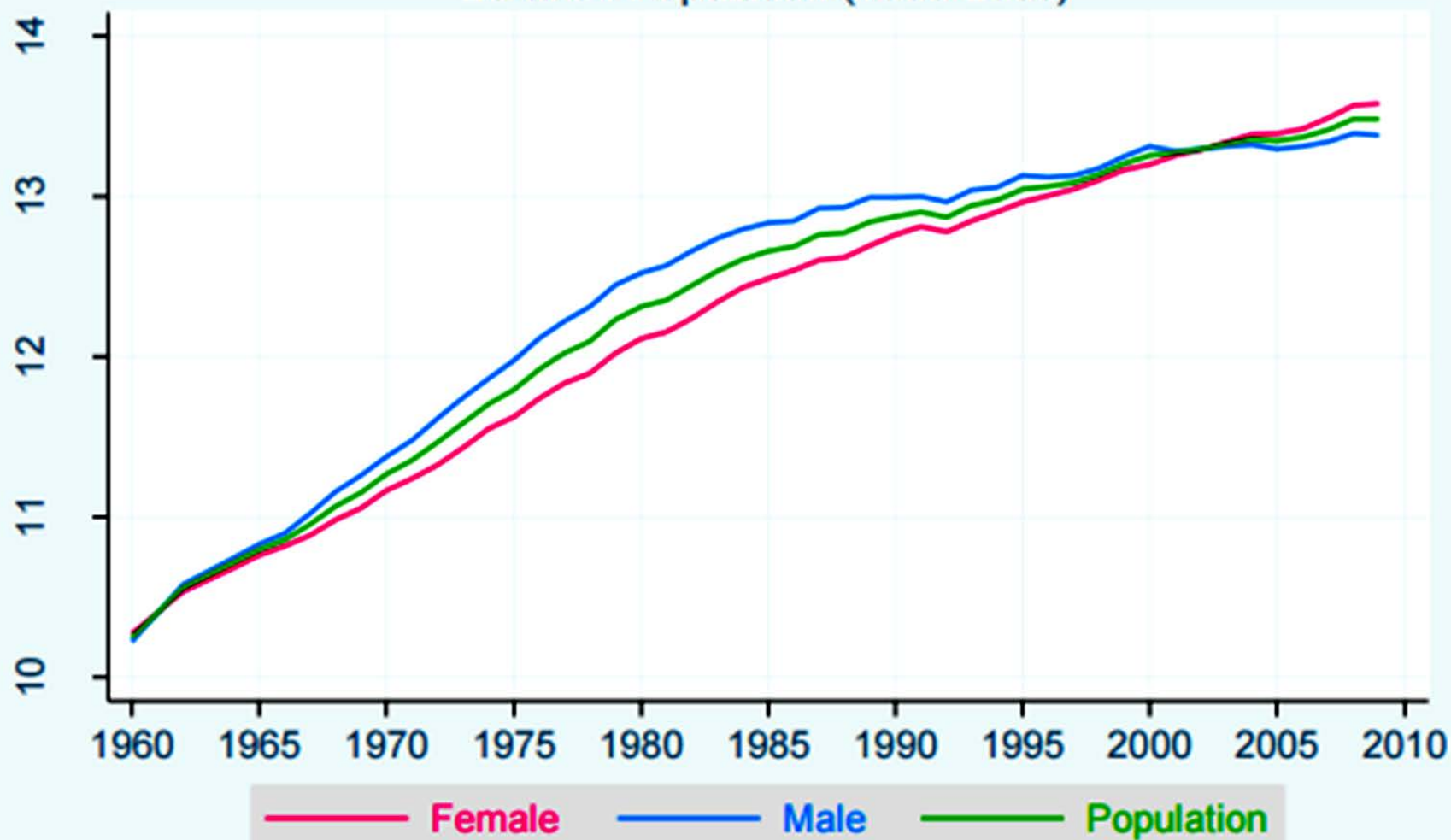
Source: U.S. Census Bureau, NCES, Author Calculations

LatAm Gini falling but still

Figure 8 LA-4 Education Gini 1992 - 2012 pop weights

■ 1992-94   ■ 1998-2000   ■ 2004-06   ■ 2010-12

	1992-94	1998-2000	2004-06	2010-12
Argentina	23	23	21	20
Brazil	46	42	37	35
Chile	27	24	22	21
Mexico	42	37	33	32
4 ctys	41	37	33	32
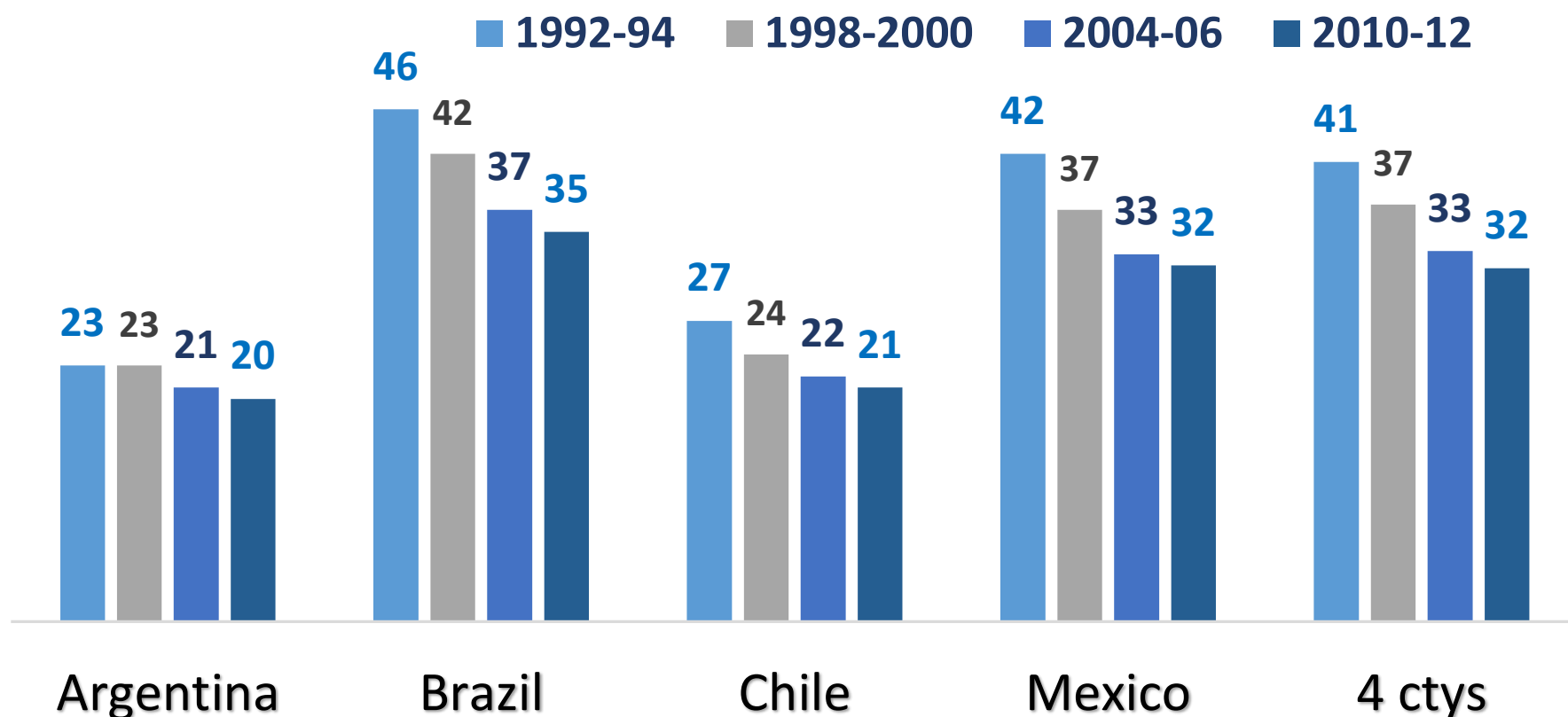
Source: CEDLAS-SEDLAC and the World Bank, online accessed March 2015

Much higher that U.S. (convergence)

Figure 2: Education Gini
25 to 64 Population (1960-2009)

1992 Attainment Category Change

Female — Male — Population
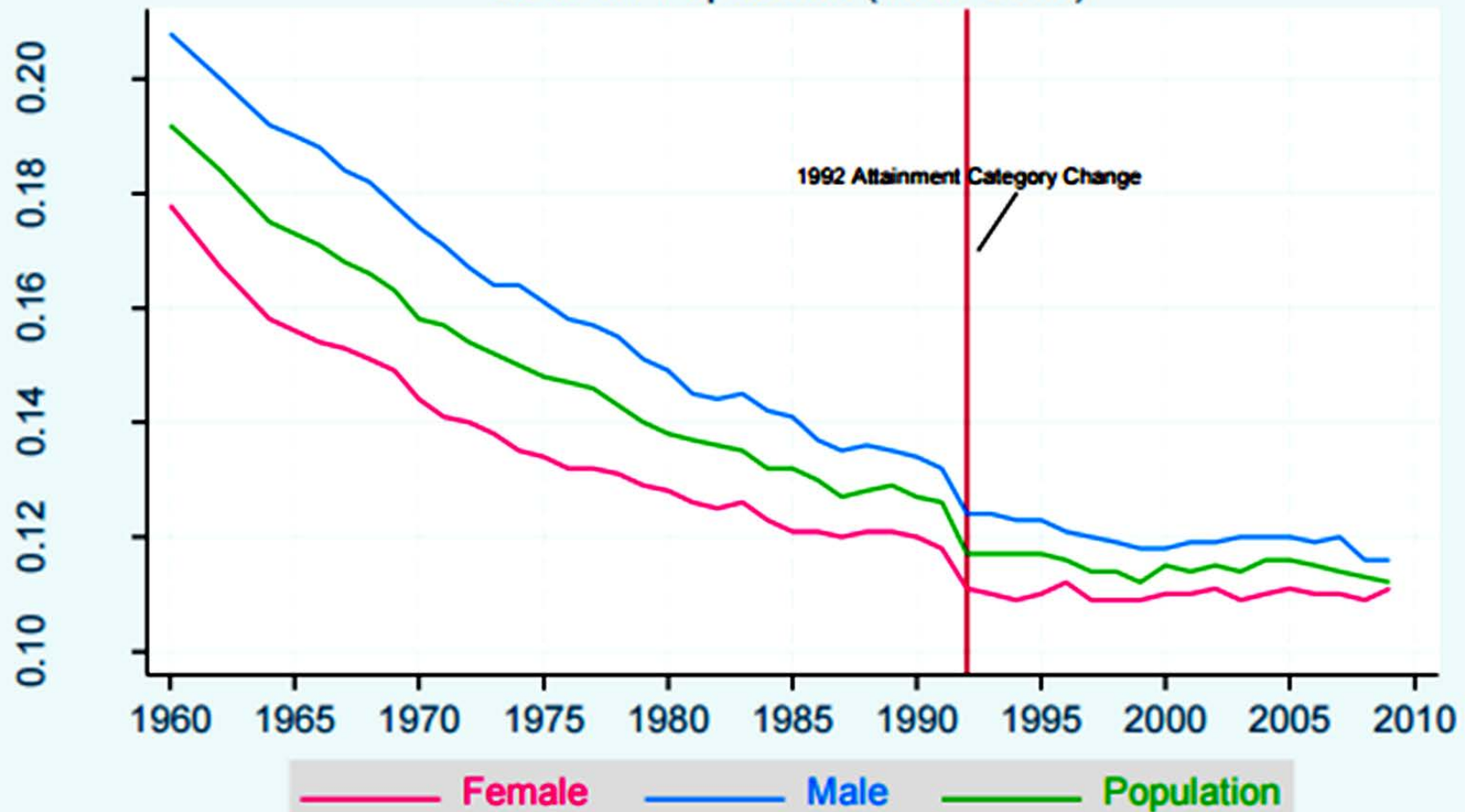
Source: U.S. Census Bureau, NCES, Author Calculations

~~Inequality~~ Single Motherhood vs. Relative Mobility Across U.S. Commuting Zones
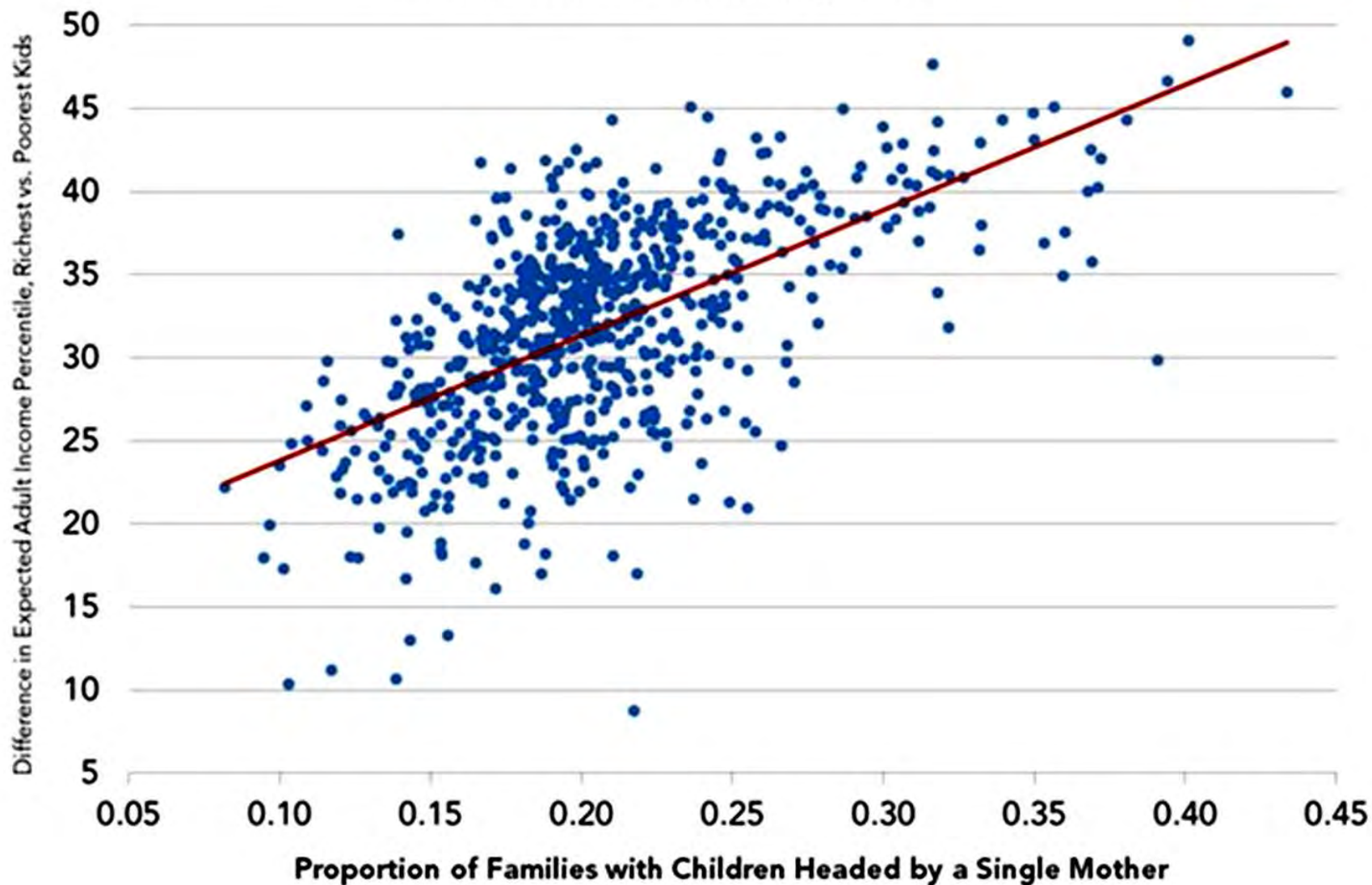
LatAm Gatsby Curve working *over time* how do we know?

- LA-4 see figure 12 LA-7 except but Colombia shown Gatsby pattern
- ***Random effects*** regressions: between and within variation both matter
- **Difference regressions**: pure within effects
- **LatAm Education Gini** falls a lot, implying mobility and more due to female than education
- Skill premia and Mincer fall increasing IGM measured by SMI (education of parents vs children)
- Rising share FHH in Latin America increase mobility and inequality?? Assortative mating?
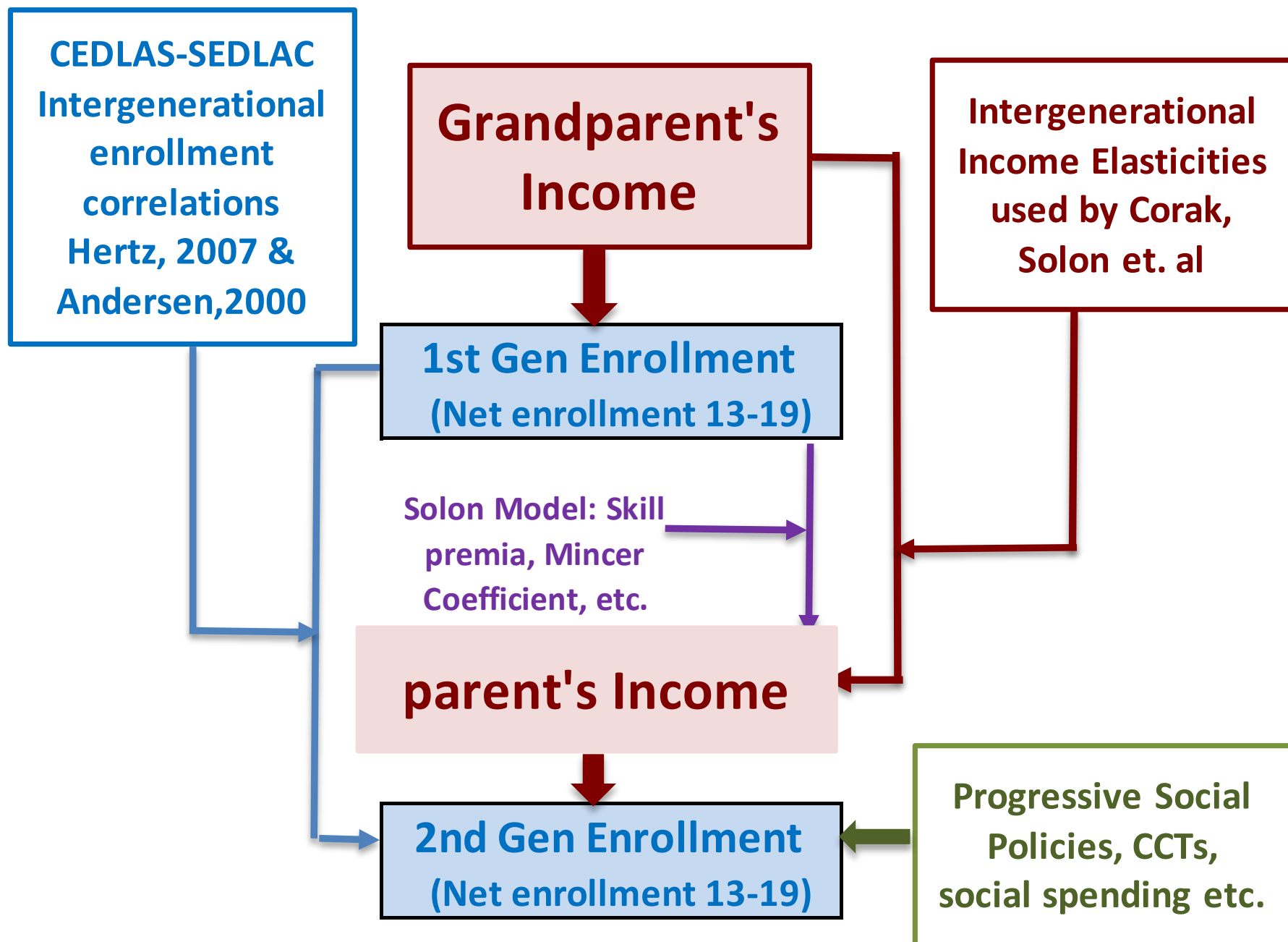
For mobility Shared prosperity matters but not top shares: "half a Palma"

Table 2: The Gatsby Curve across countries and over time for 16 Latin American countries (Education IGM).

Dependent : Log Intergenerational Mobility[a]	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)
Log Gini income	-0.22*** (0.05)	-0.27*** (0.05)				
Log Palma (20/40)[b]			-0.09*** (0.02)			
Log Palma (10/40)[c]				-0.03*** (0.01)		
Log Bottom 40%[d]					0.12*** (0.02)	0.07** (0.03)
Log Top 20%[e]					-0.04*** (0.01)	
Log Top 10%[f]						-0.07 (0.04)
Constant	5.30*** (0.19)	5.5*** (0.21)	4.58*** (0.03)	4.47*** (0.01)	3.88*** (0.16)	4.22*** (0.34)
N	112	112	111	111	111	111
Estimation:	RE	FE	RE	RE	RE	RE
p-value[g]	0.00	0.00	0.00	0.00	0.00	0.00
ρ[h]	0.45	0.55	0.51	0.42	0.50	0.50
R-squared overall	0.1	0.1	0.10	0.14	0.11	0.1
R-squared between	0.03	0.03	0.03	0.16	0.03	0.03
R-squared within	0.21	0.21	0.24	0.11	0.25	0.19
p-value Hausman	0.06		0.10	0.76	0.17	0.52

How inequality changes matters

Figure 5. The bottom 40% share of income in the Americas 1989-2012: (Argentina, Brazil, Chile, Mexico and the United States)
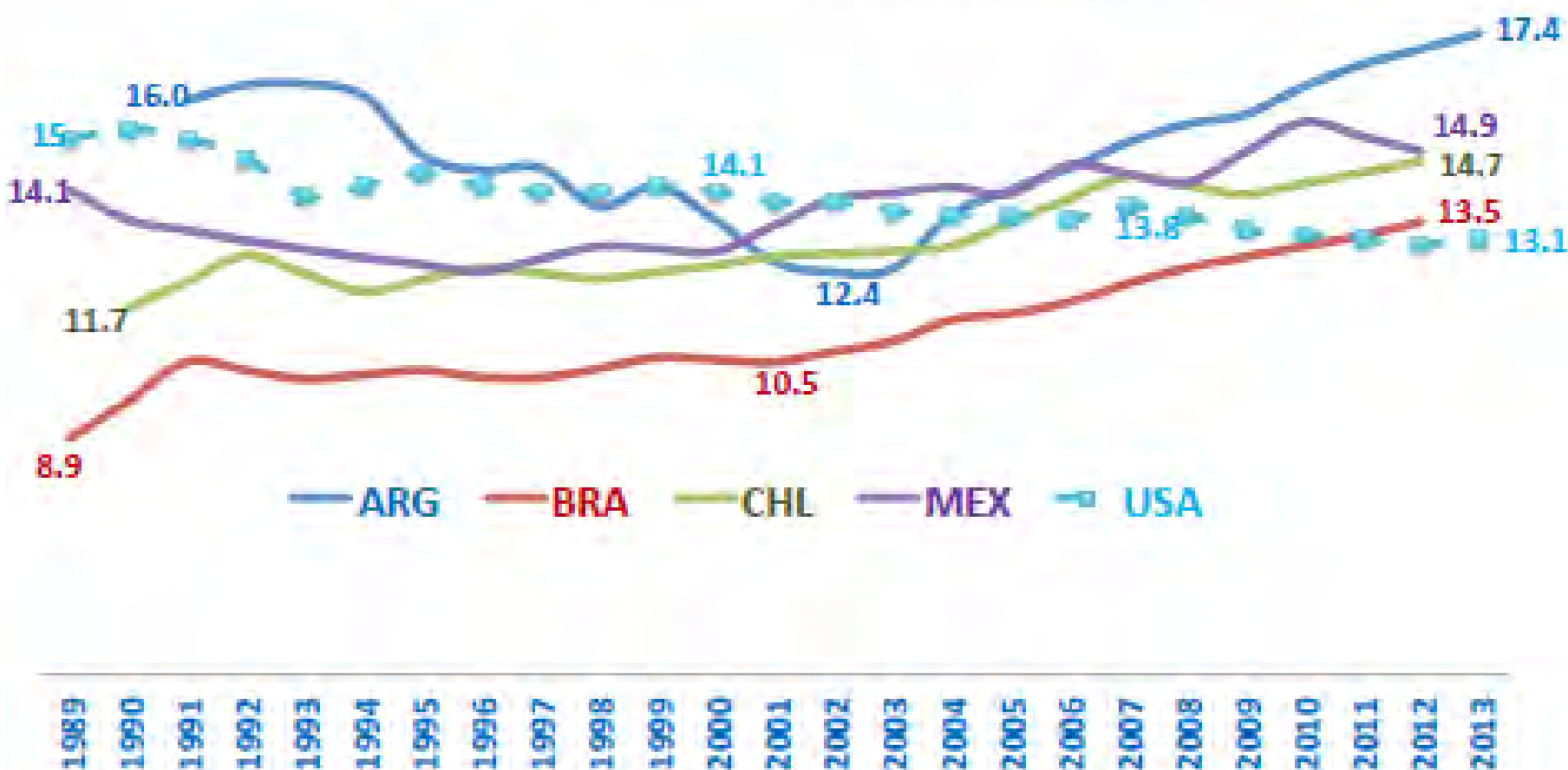
How inequality changes matters

Figure 7 U.S. Income shares Top 5% vs. Bottom 40%

Source: U.S. Census Table F-2 Families
www.census.gov/hhes/www/income/data/historical/families/

In Latin America standard Solon model works as predicated but only for women

Table 3: **Effects of Education and Inequality on Mobility. RE-models for 16 Latin American countries. (Education IGM)**

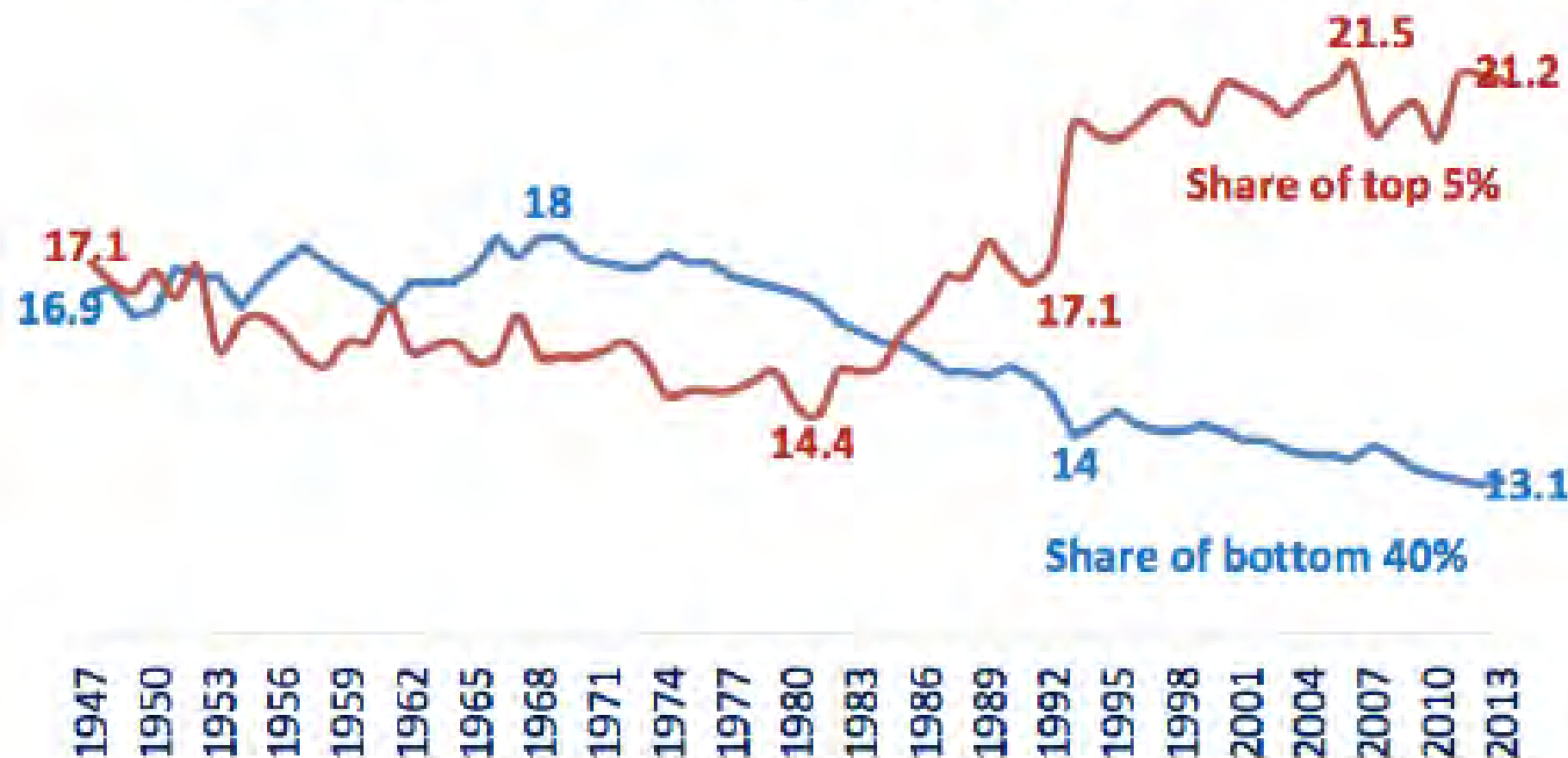| Dependent : Log Intergenerational Mobility[a]	(3.1)	(3.2)	(3.3)	(3.4)	(3.5)	(3.6)	(3.7)
Log Gini income	-0.19*** (0.04)						
Log Skill-premium					-0.08*** (0.02)	-0.06*** (0.02)	-0.07*** (0.02)
Log Bottom 40%[b]		0.1*** (0.02)	0.07*** (0.02)				
Log Top 20%[c]		-0.03*** (0.01)					
Log Top 10%[d]			-0.02 (0.04)				
Log Gini education				-0.08** (0.03)			-0.01 (0.04)
Log Female Mincer[e]					-0.02*** (0.01)	-0.01 (0.01)	-0.01 (0.01)
Log Net enrollment secondary[f]	0.09*** (0.01)	0.08*** (0.01)	0.08*** (0.01)	0.06*** (0.02)			
Log Net enrollment secondary female[g]						0.08*** (0.01)	0.07*** (0.02)
Constant	4.81*** (0.18)	3.64*** (0.14)	3.66*** (0.28)	4.46*** (0.14)	4.5*** (0.03)	4.16*** (0.06)	4.25*** (0.18)
N	108	107	107	106	105	97	97
Estimation:	RE	RE	RE	RE	RE	RE	FE
p-value[h]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ρ^i	0.45	0.45	0.42	0.26	0.49	0.54	0.55
R-squared overall	0.44	0.47	0.47	0.55	0.22	0.46	0.48
R-squared between	0.42	0.46	0.48	0.63	0.11	0.42	0.44
R-squared within	0.53	0.5	0.45	0.40	0.30	0.46	0.49

Mincer coefficient fell less for women

Figure 13: Latin American Mincer Coefficients by Gender 1986-2013 (16 countries population Weighted)

0.49   0.52   0.50   0.52   0.50

0.36

0.30   0.33   0.41   0.31

0.25   0.17

Men   women
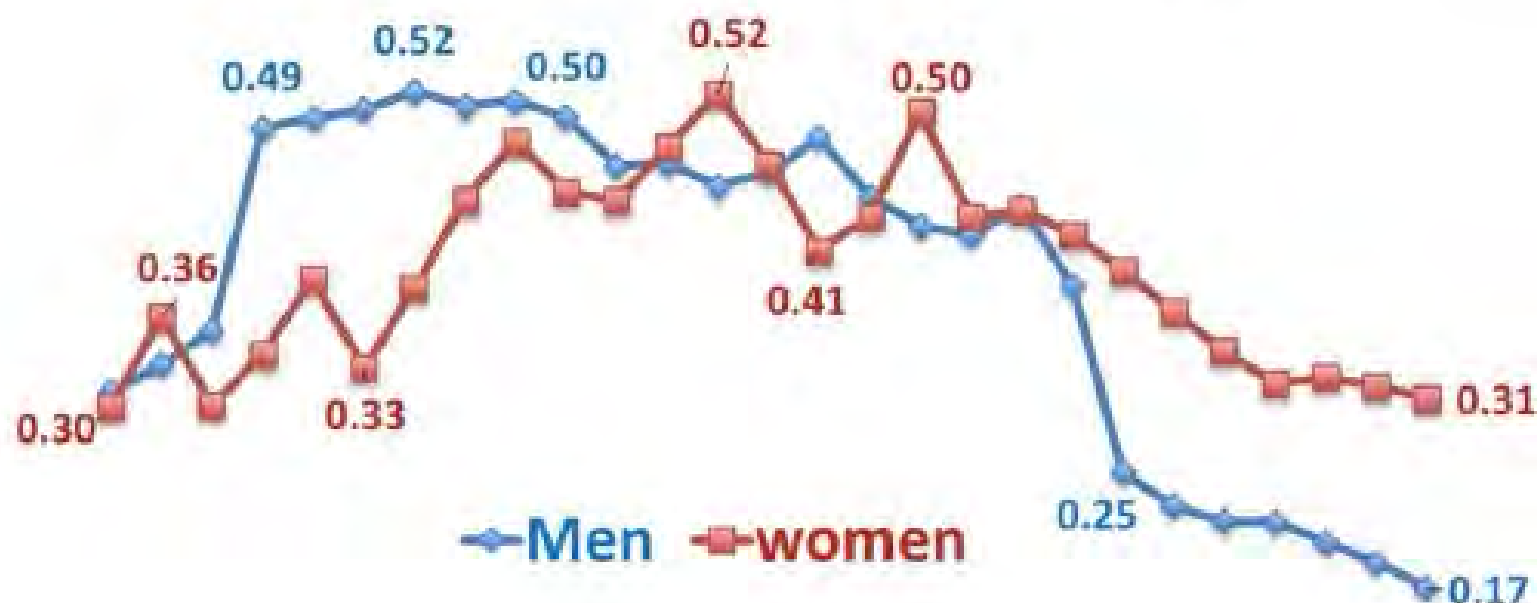
1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012

1st difference regressions: pure within country effects: CCTs increase mobility

Table 4: **Effects of Education and Inequality on Mobility. First difference-models for 16 Latin American countries. (Education IGM)**

Dependent : Log Intergenerational Mobility[a]	(4.1)	(4.2)	(4.3)	(4.4)	(4.5)	(4.6)
D. Bottom 40%[b]	0.02*** (0.01)	0.02** (0.01)	0.02*** (0.01)	0.02*** (0.01)	0.02** (0.01)	0.02*** (0.01)
D. Top 20%[c]	0.01* (0.003)	0.01** (0.003)	0.01** (0.003)	0.01*** (0.003)	0.01*** (0.003)	0.01*** (0.003)
D. Gini education		-0.54*** (0.17)	-0.66*** (0.17)	-0.54*** (0.16)	-0.64*** (0.16)	-0.59*** (0.16)
D. Skill-premium[d]		-0.04** (0.02)	-0.04** (0.02)	-0.03** (0.02)	-0.04** (0.02)	-0.04** (0.02)
Female Mincer (-1)[e]			0.07*** (0.03)	-0.04** (0.02)	-0.04** (0.02)	-0.04** (0.02)
Conditional cash transfers[f]				0.02** (0.01)	0.02*** (0.01)	0.01** (0.01)

1st difference regressions: pure within country FHHs on LatAm SMI

Table 4: Effects of Education and Inequality on Mobility. First difference-models for 16 Latin American countries. (Education IGM)

Dependent : Log Intergenerational Mobility[a]	(4.1)	(4.2)	(4.3)	(4.4)	(4.5)	(4.6)
D. Female Headed monoparental[g]					0.002*** (0.001)	
D. Female Headed Urban Total[h]						0.004** (0.002)
Constant	0.01*** (0.003)	0.002 (0.004)	0.004 (0.004)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
N	92	87	85	85	78	78
Estimation:	FD	FD	FD	FD	FD	FD
p-value[1]	0.00	0.00	0.00	0.00	0.00	0.00
R-squared overall	0.11	0.25	0.31	0.34	0.41	0.39
R-squared between	0.12	0.3	0.14	0.45	0.35	0.49
R-squared within	0.1	0.25	0.34	0.33	0.42	0.37

CCTs and Social spending affect both inequality and mobility: closing Gatsby circle

Table 6: **Gini income determinants. RE-models for 16 Latin American countries.**

Dependent : Log Gini Income[a]	(6.1)	(6.2)	(6.3)	(6.4)	(6.5)
Log Gini Education[b]	0.18*** (0.05)				
Log Skill-premium[c]		0.19*** (0.03)			
Log Bottom 40%[d]			-0.45*** (0.02)		
Log Top 20%[e]			0.15*** (0.01)		
Log Net enrollments secondary female[f]				-0.07*** (0.02)	
Log Female Mincer[g]					0.07*** (0.01)
Constant	3.28*** (0.17)	3.71*** (0.04)	5.82*** (0.11)	4.2*** (0.10)	3.99*** (0.03)
N	110	108	108	101	104
Estimation:	RE	RE	RE	RE	RE
p-value[h]	0.00	0.00	0.00	0.00	0.00
ρ^{i}	0.66	0.55	0.36	0.76	0.73
R-squared overall	0.17	0.40	0.11	0.11	0.08
R-squared between	0.1	0.45	0.02	0.01	0.08
R-squared within	0.13	0.20	0.08	0.08	0.21
p-value Hausman	0.69	0.8	0.27	0.82	0.84

Education Gini gendered correlate of SMI

Table 5: Gini education determinants. FE-models for 16 Latin American countries.

Dependent : Log Gini Education[a]	(5.1)	(5.2)	(5.3)	(5.4)	(5.5)	(5.6)
Log Male enrollments secondary[b]	-0.27*** (0.03)	-0.25*** (0.04)		-0.23*** (0.04)		
Log Female enrollments secondary[c]					-0.27*** (0.04)	-0.25*** (0.04)
Log Social expenditure[d]	-0.11*** (0.03)	-0.12*** (0.04)	-0.21*** (0.04)	-0.09** (0.04)	-0.11*** (0.04)	-0.08** (0.04)
Log Female Mincer[e]			0.07** (0.03)	0.04 (0.02)		0.04 (0.02)
Constant	4.87*** (0.12)	4.79*** (0.11)	4.1*** (0.1)	4.69*** (0.12)	4.84*** (0.12)	4.74*** (0.12)
N	93	93	91	91	88	86
Estimation:	RE	FE	RE	FE	FE	FE
p-value[f]	0.00	0.00	0.00	0.00	0.00	0.00
ρ[g]	0.89	0.92	0.94	0.93	0.90	0.92
R-squared overall	0.64	0.63	0.19	0.61	0.72	0.69
R-squared between	0.63	0.62	0.09	0.6	0.78	0.74
R-squared within	0.66	0.66	0.49	0.68	0.67	0.69
p-value Hausman	0.06		0.74			

The Gatsby Curve works within and between LatAm Latin America

- **Convergence:** inequality high in LatAm mobility low relative to U.S. now converging

- **Social policy:** LatAm greater commitment to equity that the USA (since 2000 at least)

- **Gender:** large gains in education made by women, rise in Female headed households increased mobility

- **Open question?** is LatAm, Andersen, 2000 CS-WB SMI meaningful?

Why the Gatsby curve is working in Latin America but not in the U.S.?

- Rising inequality in the U.S. is at the very top 1% and 10% al la Piketty, but this does not effect mobility

- LatAm has a rising middle class, improved education (starting from a low base)

- Class, race & family structure create obstacles to mobility in the U.S. despite some progress in access to education…

- CCTs and education policy working in LatAm but less in the United States (preschool etc.)

Why the Gatsby curve is working in Latin America but not in the U.S. convergence

- Inequality started very high in Latin America, Mobility very low (lowest PISA scores & mobility in the World)

- LatAm inequality falling and mobility rising but just to U.S. levels

- Gender, class, race & family structure still a problem in both regions… access to education in Chile for example…

Figure 11A Correlation of parent & children's education; higher indicates lower mobility, so LatAm started with lowest inter-generational mobility and highest inequality in the world
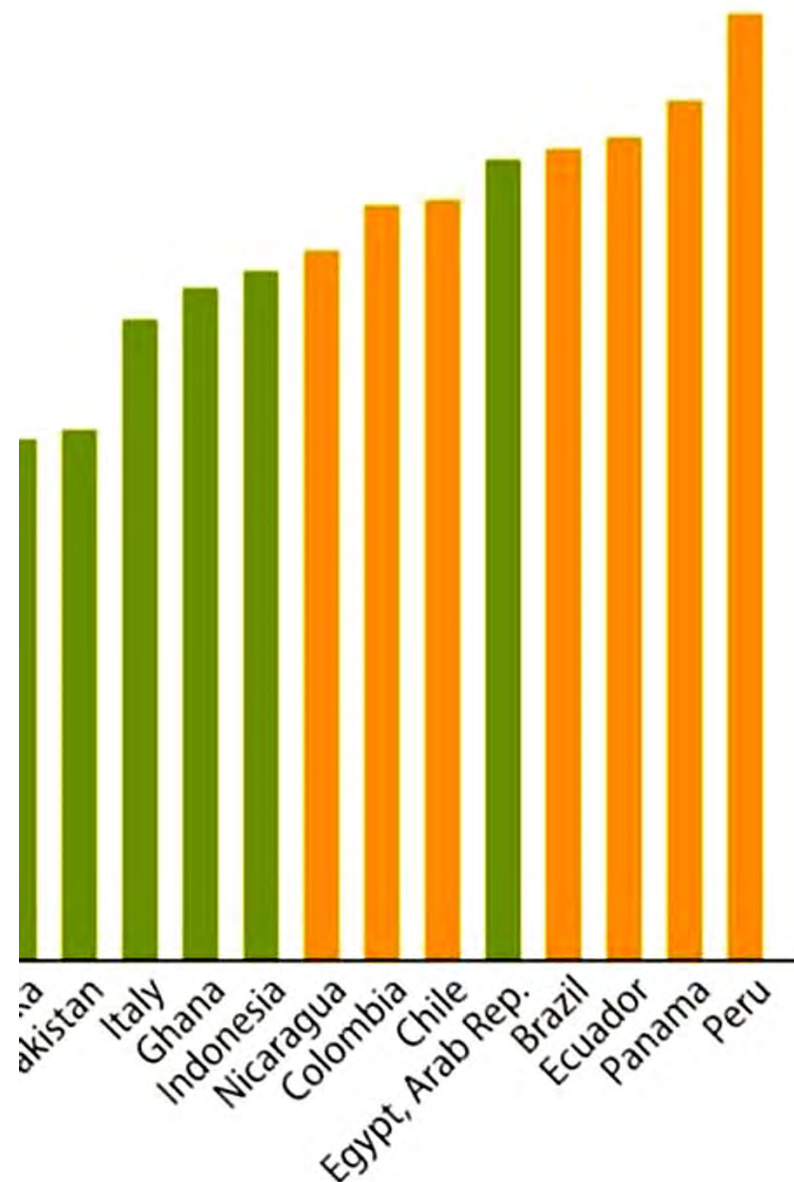
Source: Ferreira et all 2012 based on data from Hertz et al. 2007.
Note: Bars represent the impact of one standard deviation of parental years of schooling on the years of schooling of children.

Years of education

...a ...akistan Italy Ghana Indonesia Nicaragua Colombia Chile Egypt, Arab Rep. Brazil Ecuador Panama Peru

e: Hertz et al (2007)

LatAm mobility lowest in world Hertz 2007

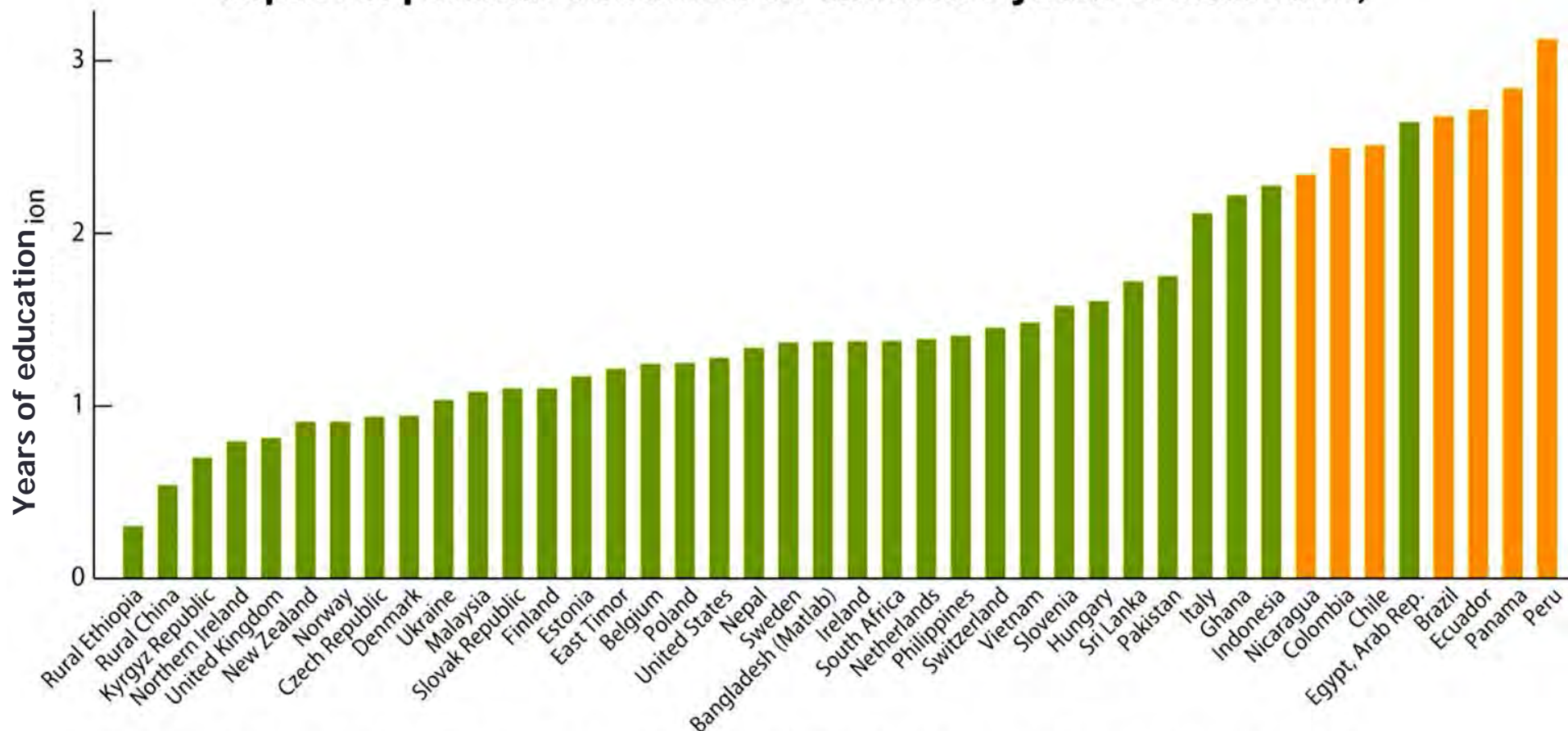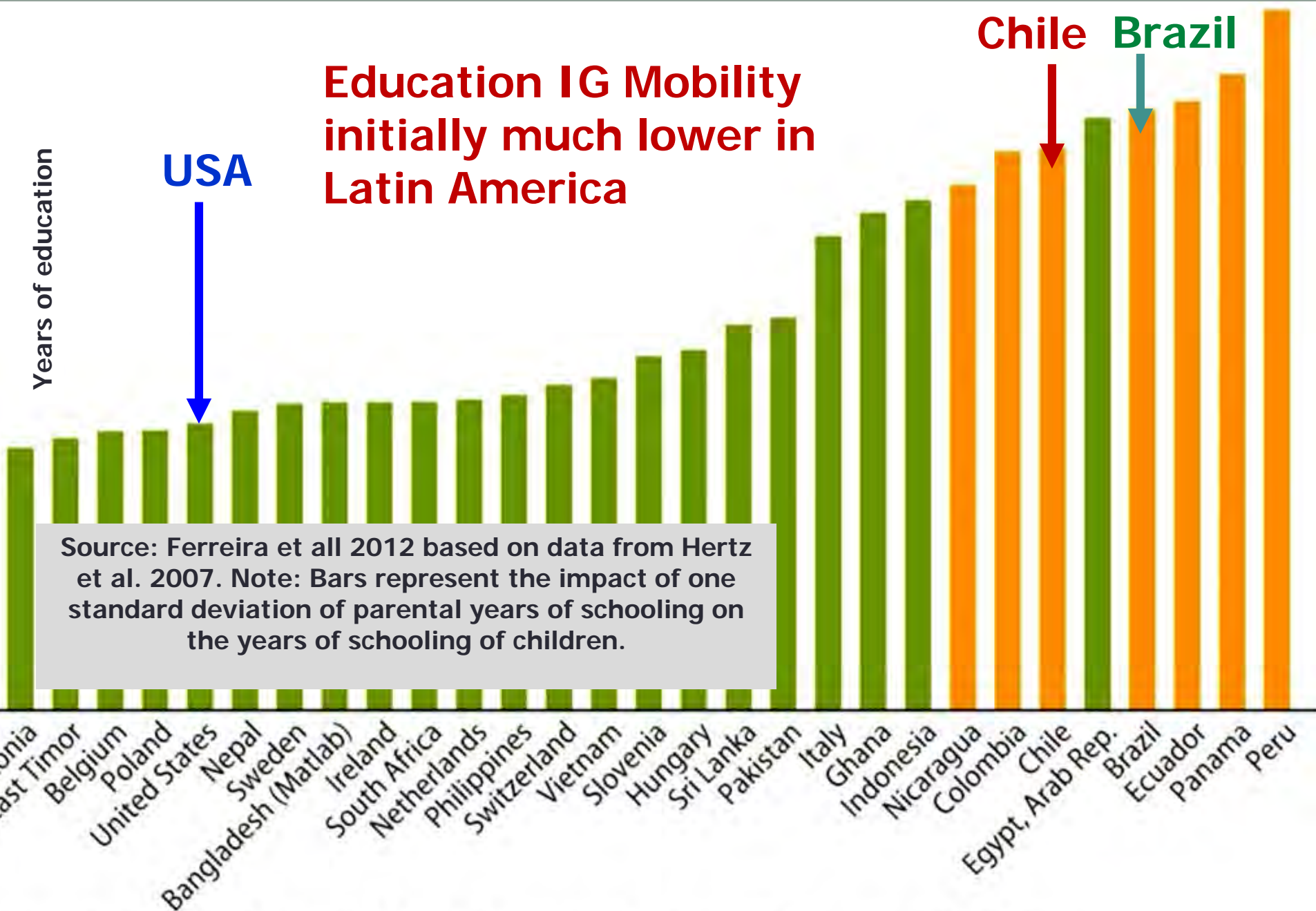## Impact of parental education on children's years of education;

Figure 5. Figure 2.3 from Ferreira, Lopez-Calva et all 20122010. Data source *Source: Hertz et al* (2007)

Source: Ferreira et all 2012 based on data from Hertz et al. 2007.
Note: Bars represent the impact of one standard deviation of
parental years of schooling on the years of schooling of children.

Chile **Brazil**

Education IG Mobility initially much lower in Latin America

USA

Years of education

Source: Ferreira et all 2012 based on data from Hertz et al. 2007. Note: Bars represent the impact of one standard deviation of parental years of schooling on the years of schooling of children.

East Timor, Belgium, Poland, United States, Nepal, Sweden, Bangladesh (Matlab), Ireland, South Africa, Netherlands, Philippines, Switzerland, Vietnam, Slovenia, Hungary, Sri Lanka, Pakistan, Italy, Ghana, Indonesia, Nicaragua, Colombia, Chile, Egypt, Arab Rep., Brazil, Ecuador, Panama, Peru

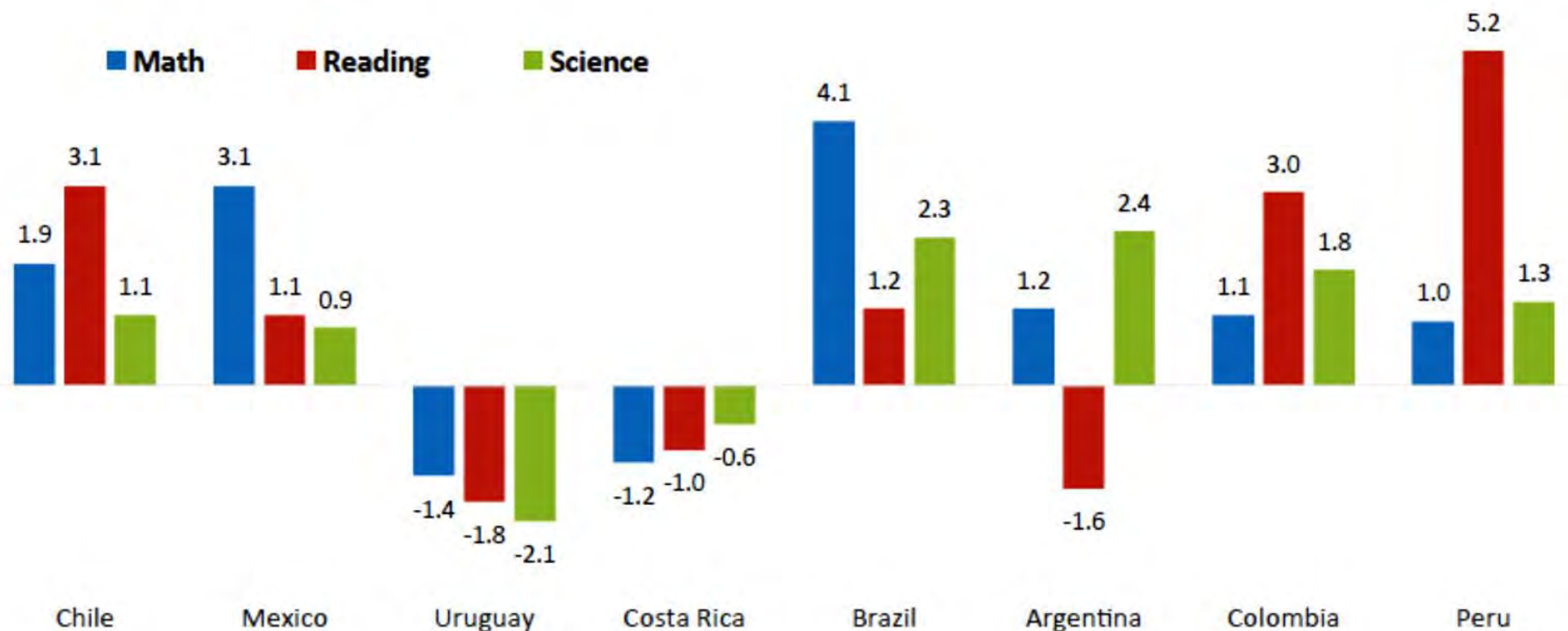opez-Calva et all 20122010. Data source *Source: Hertz et al* (2007).

Duade,2011 restimates SMI (still very low)

Regional average correlation coefficients between own and parental
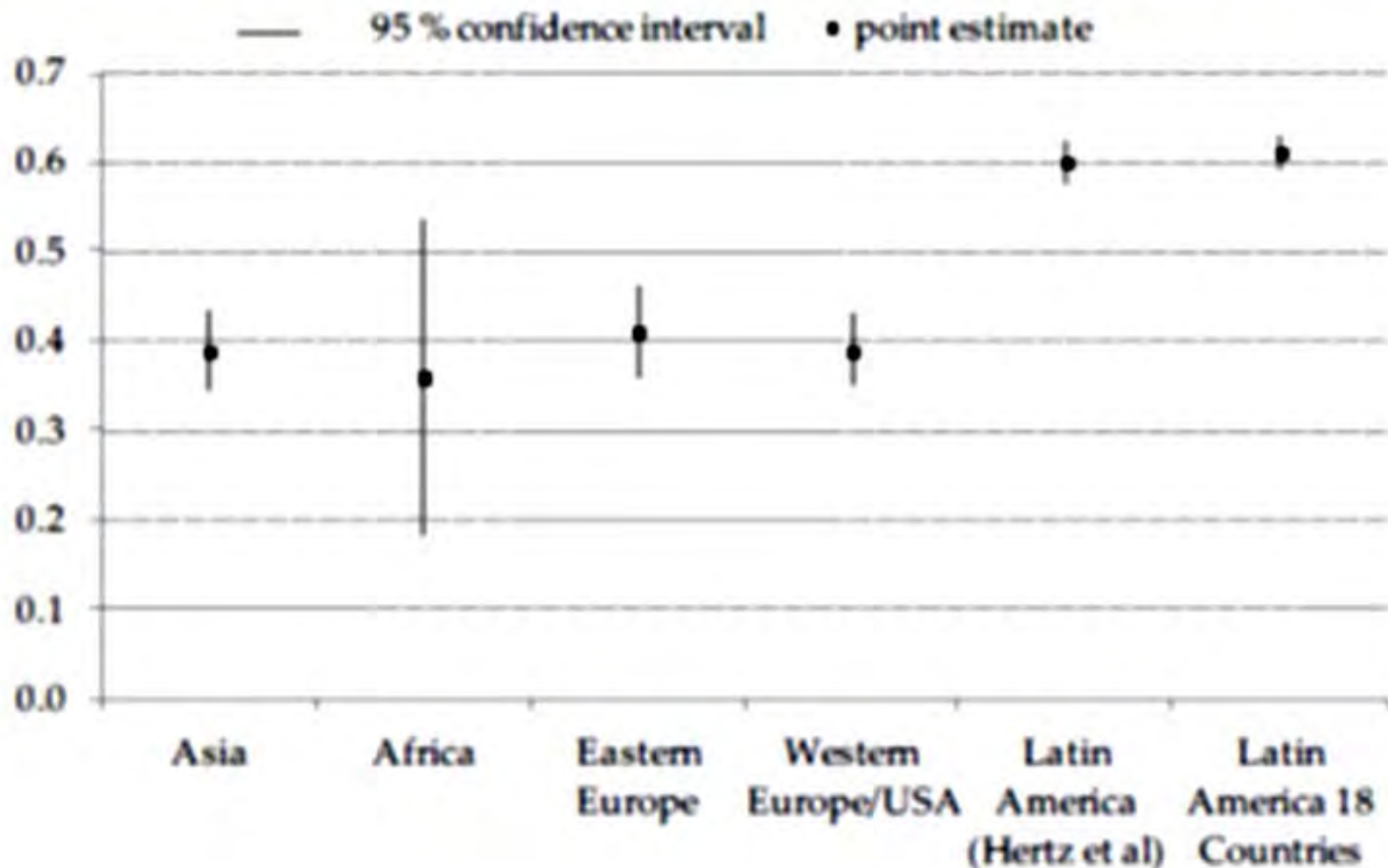
LatAm (Brazil) some progress on PISA
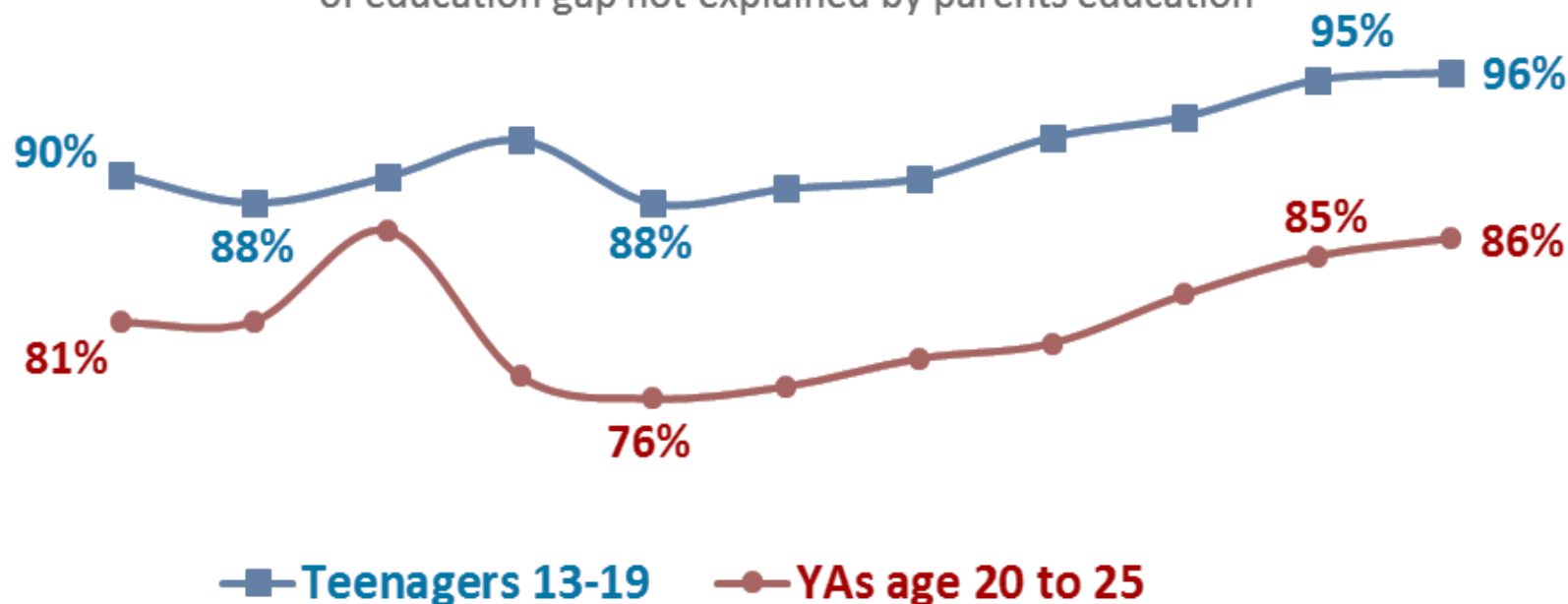

Figure 12: Annualized change in Pisa Scores 2000-03 to 2012.

Source: OECD (2015) PISA 2012 Results in Focus: What 15-year-olds know, OECD, Paris.
http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf

Chile mobility increasing

Figure C-1: Intergenerational Education Mobility Chile: share of education gap not explained by parents education

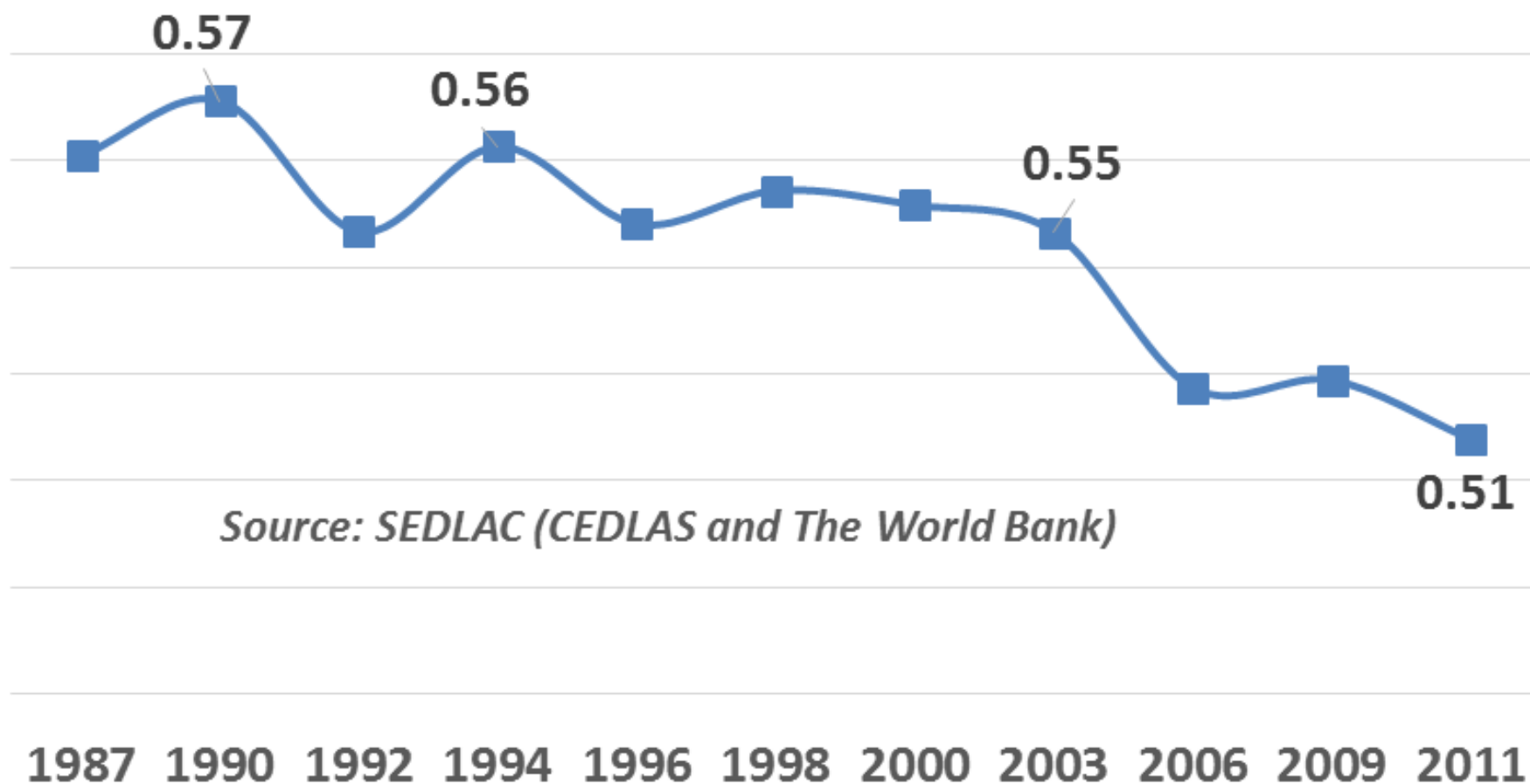# Chile inequality is falling…

Figure G-1 Chile Inequality Gini Falls

Source: SEDLAC (CEDLAS and The World Bank)

Camila Vallejo Dowling Chilean student leader now deputy Vallejo dowling
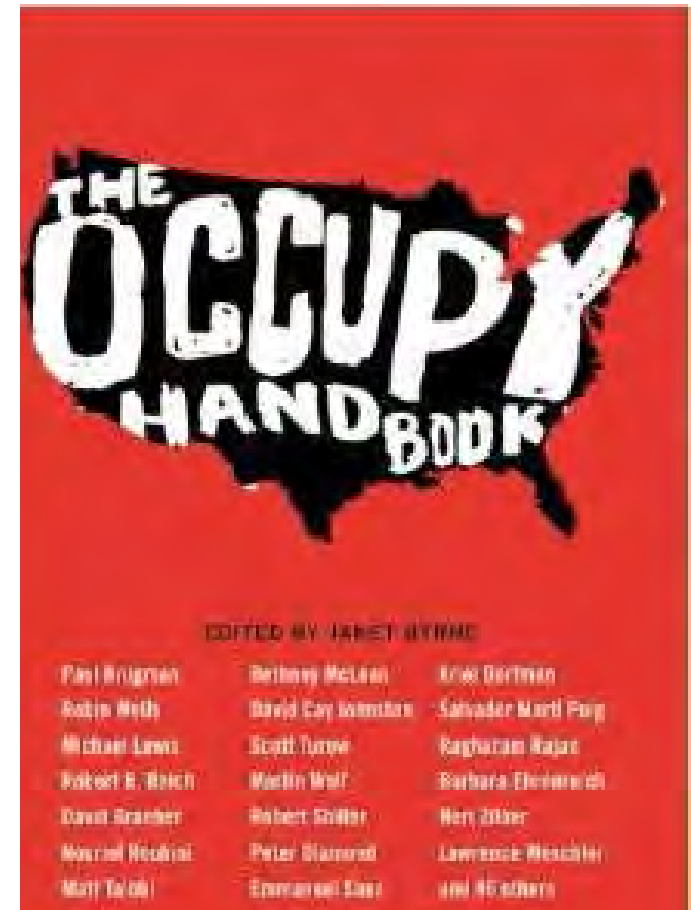
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Gráfic 7. Skill-Premium vs Movilidad en EEUU.

FIGURE 4

Labor market inequality matters

Lower generational mobility is associated with higher returns to education
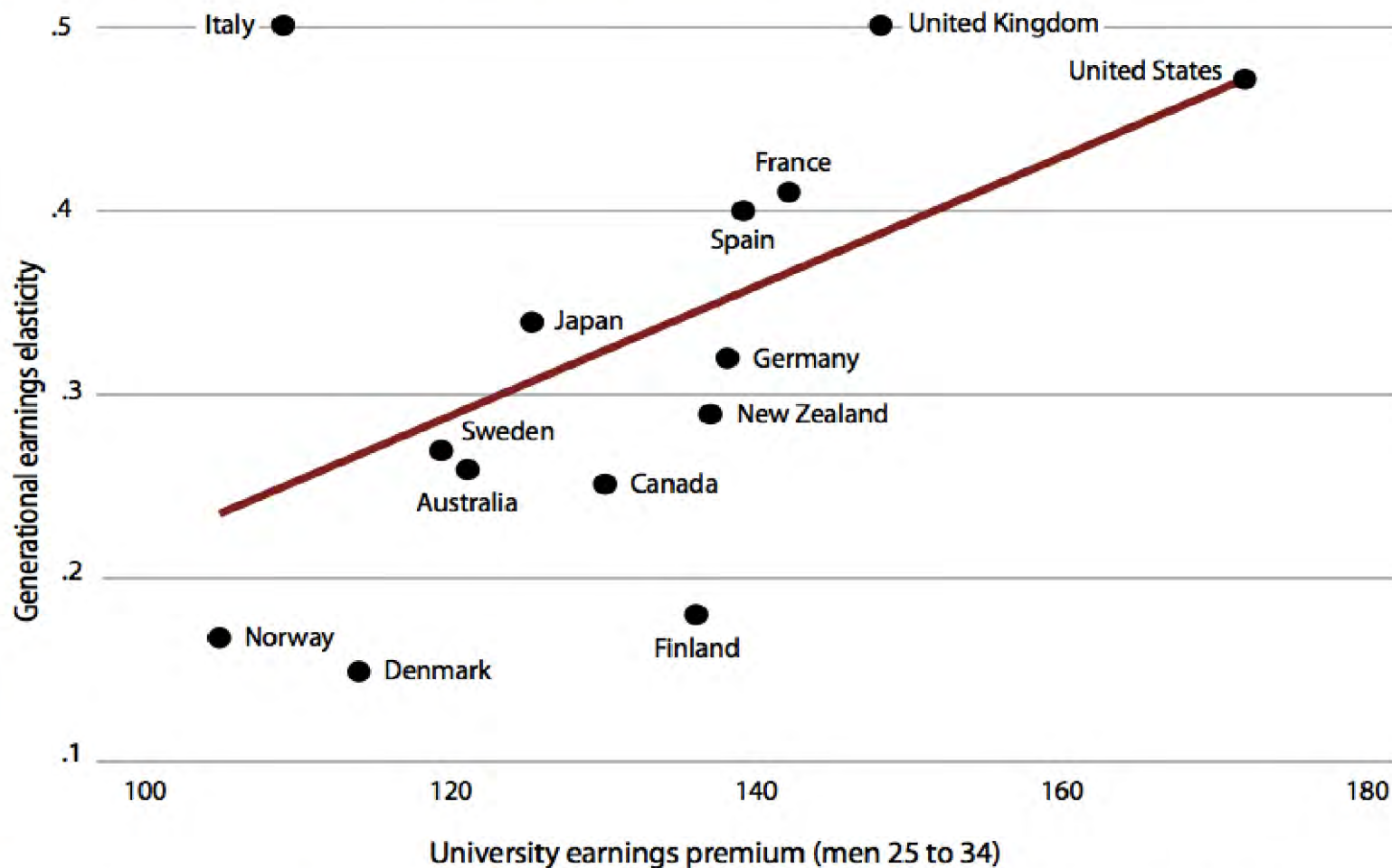
Figure 1. Great Gatsby Curve: Gini income vs. Mobility (youths 13:19), 16 LatAm ctrys, 1995 and 2011
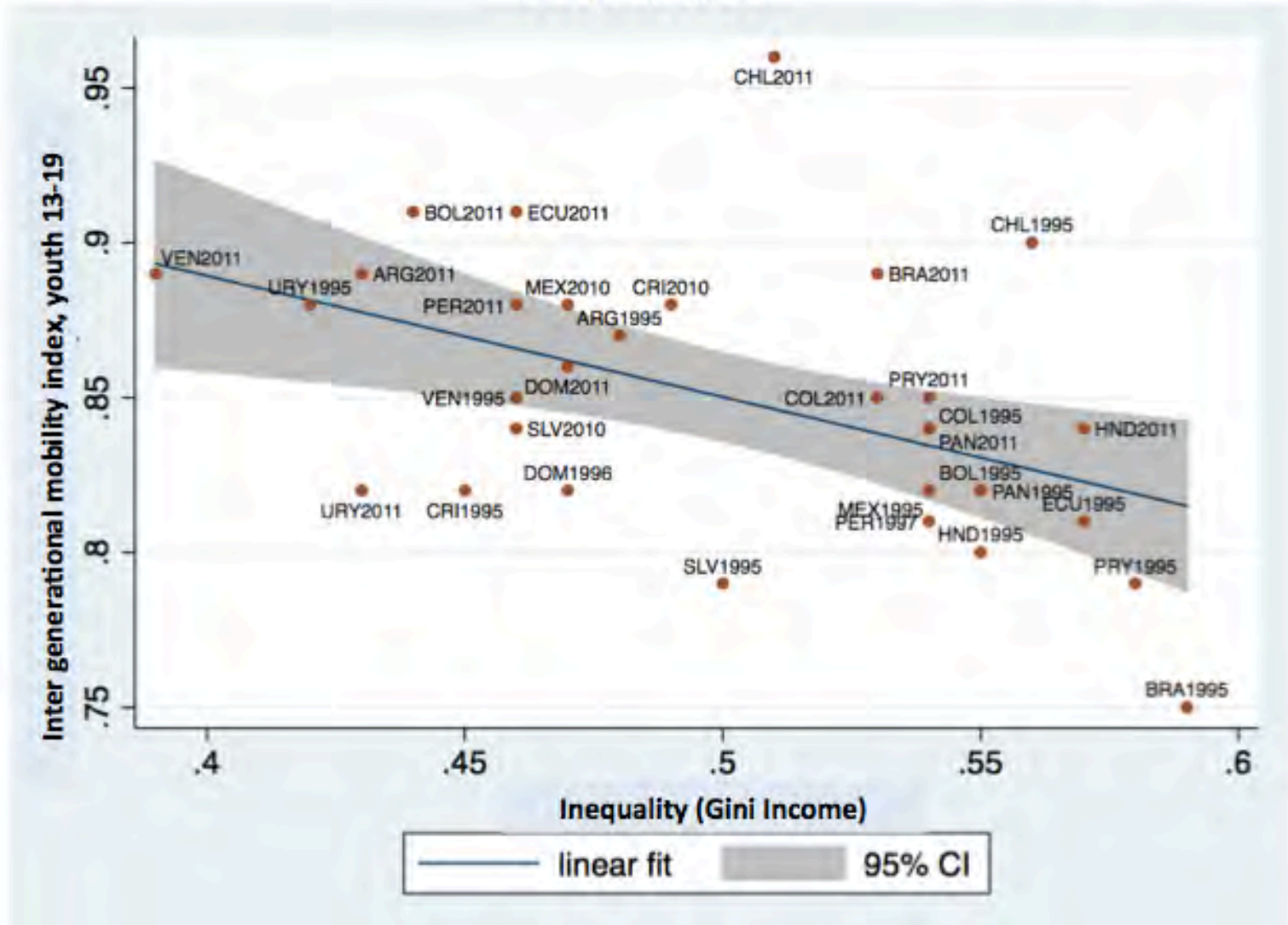
Source: Ali Brahim (2014)

Figure 12. Change in the Gini index, selected Latin American countries, 2000-2010.
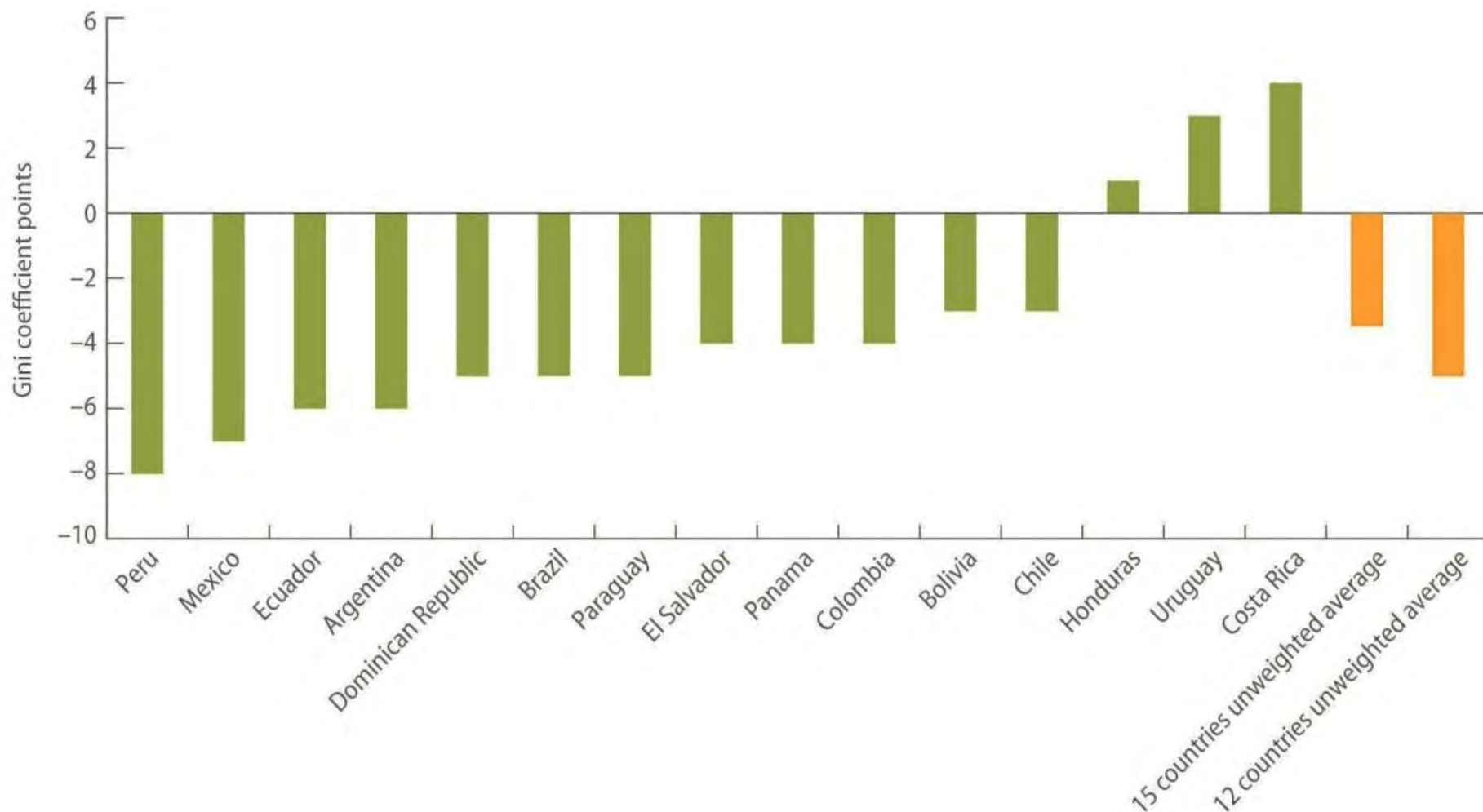
Source: Figure 1.3 from Ferreira et al (2010), modified by Ferreira (2012). Data source: World bank 2011

What is socio-economic mobility?
Typical measures (see Chetty et al. 2014)

- **Absolute mobility:** How far do children of parents at the 25th percentile, in 1980-82 for example, expect to progress up the income ladder by 2010-2012?

- **Intergenerational mobility:** correlation of parents & children's education/income: **low correlation** is high mobility, **high correlation** signals low mobility.

- **Relative mobility:** How far can someone in the bottom 20% for example expect to progress?

Why should inequality reduce mobility? (source Chetty et al. 2014)

Changes in the Income Ladder in the United States

Highest Income

Highest Income

Lowest Income   **1970s**

Lowest Income

1990s
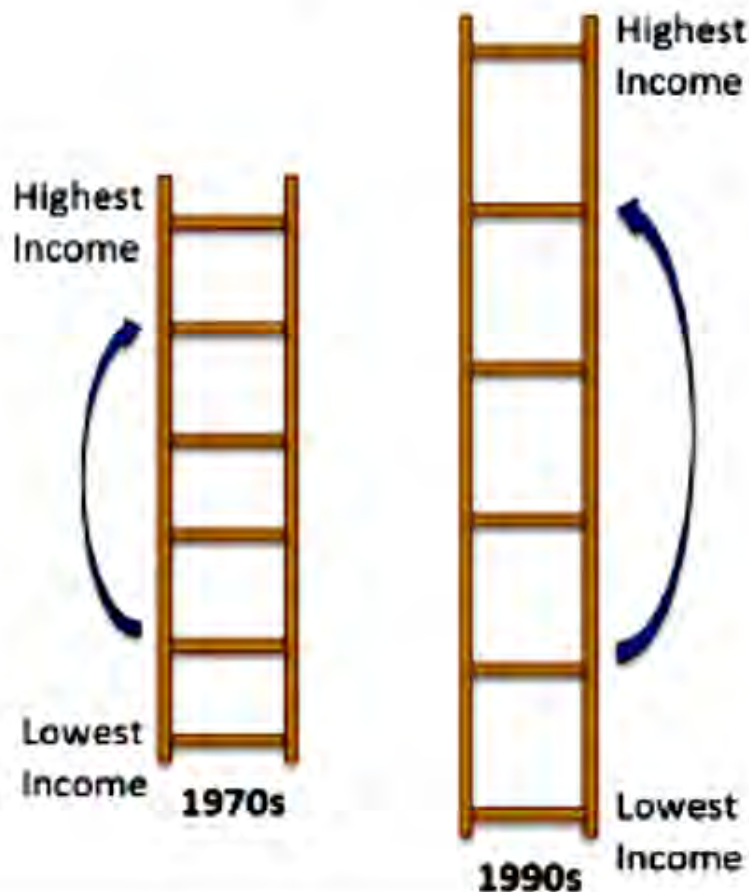
The rungs of the income ladder have grown further apart (income inequality has increased)

...but children's chances of climbing from lower to higher rungs have not changed.

How much mobility should we have?

- **Enter the Great Gatsby curve:** more than other countries America "the land of opportunity"

- **Miles Corak did the work Alan Krueger's CEA came up with name:** presented in a speech at the Rock & Hall of Fame

What's the relationship between mobility & inequality? : The Great Gatsby Curve

- **Hypothesis: higher inequality reduces mobility,**

- Former **CEA head Alan Krueger** (now at Princeton) introduced the concept, and a staff member came up with term in 2012, perhaps after seeing the (AK got credit, his CEA staff member got a bottle of wine).

- **Why does inequality reduce mobility?** Rungs of ladder farther apart, harder to climb, poor have fewer resources to spend on children relative to rich, so rich kids have unfair advantage.

Figure 1

The Great Gatsby Curve: More Inequality is Associated with Less Mobility across the Generations
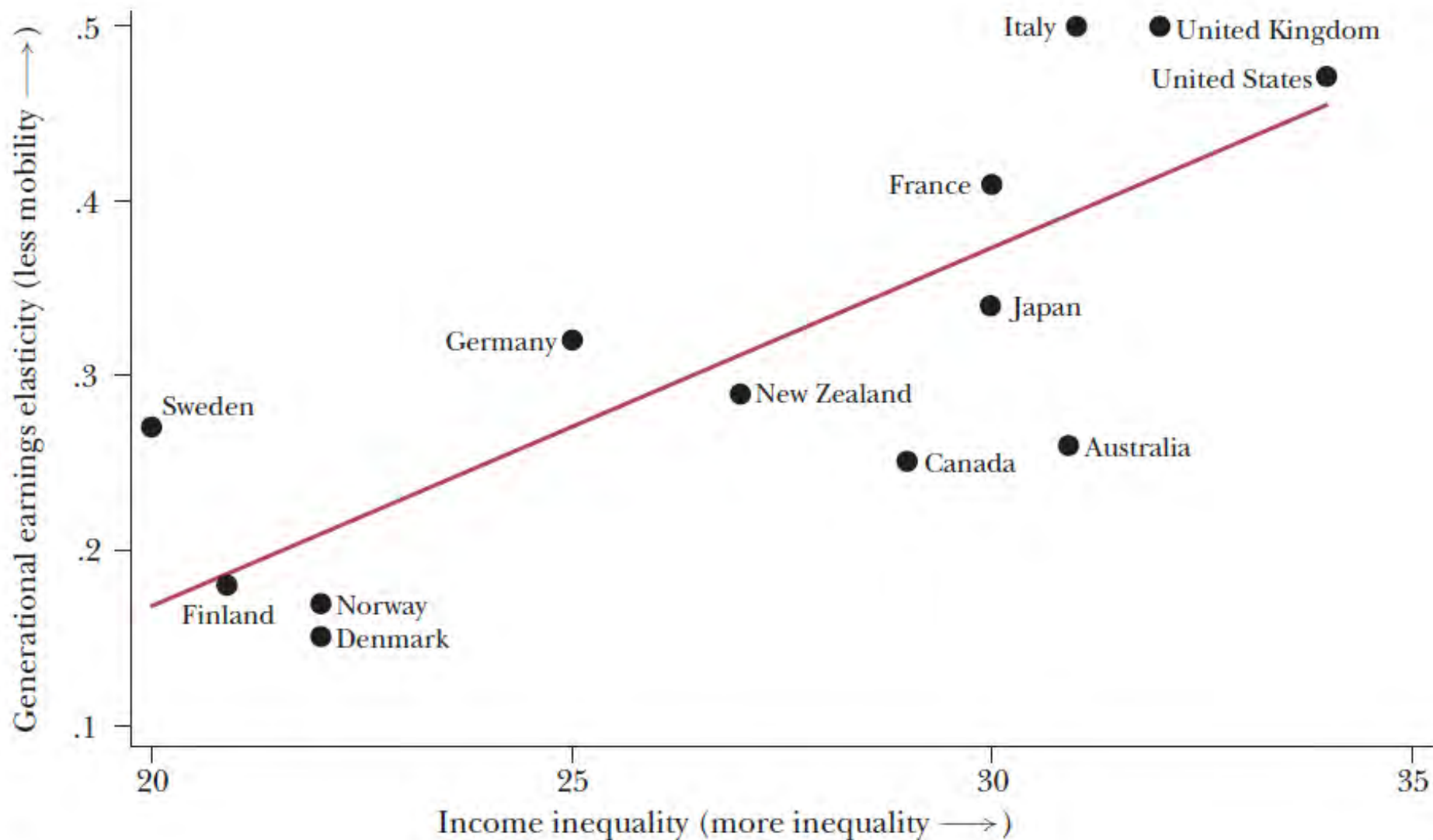
intergenerational elasticity of income: How much a 1% increase in your father's income affects your expected income. The higher this number, the lower is social mobility.

Notes on Figure 1 Great Gatsby curve

Corak (2013) and OECD.*Notes:* Income inequality is measured as the Gini coeffi cient, using disposable household income for about 1985 as provided by the OECD. Intergenerational economic mobility is measured as the elasticity between paternal earnings and a son's adult earnings, using data on a cohort of children born, roughly speaking, during the early to mid 1960s and measuring their adult outcomes in the mid to late 1990s. The estimates of the intergenerational earnings elasticity are derived from published studies, adjusted for methodological comparability in a way that I describe in the appendix to Corak (2006), updated with a more recent literature review reported in Corak (2013), where I also offer estimates for a total of 22 countries. I only use estimates derived from data that are nationally representative of the population and which are rich enough to make comparisons across generations within the same family. In addition, I only use studies that correct for the type of measurement errors described by Atkinson, Maynard, and Trinder (1983), Solon (1992), and Zimmerman (1992), which means deriving permanent earnings by either averaging annual data over several years or by using instrumental variables.

Chutes and ladders

- **Ladders:** migration, education, health, manufacturing jobs, remittances, starting a business

- **Chutes:** single parent family, correlation between parents & children's education (low is high mobility, high correlation is low)

Figure 1. Great Gatsby Curve: Gini income vs. Mobility (youths 13:19), 16 LatAm ctrys, 1995 and 2011
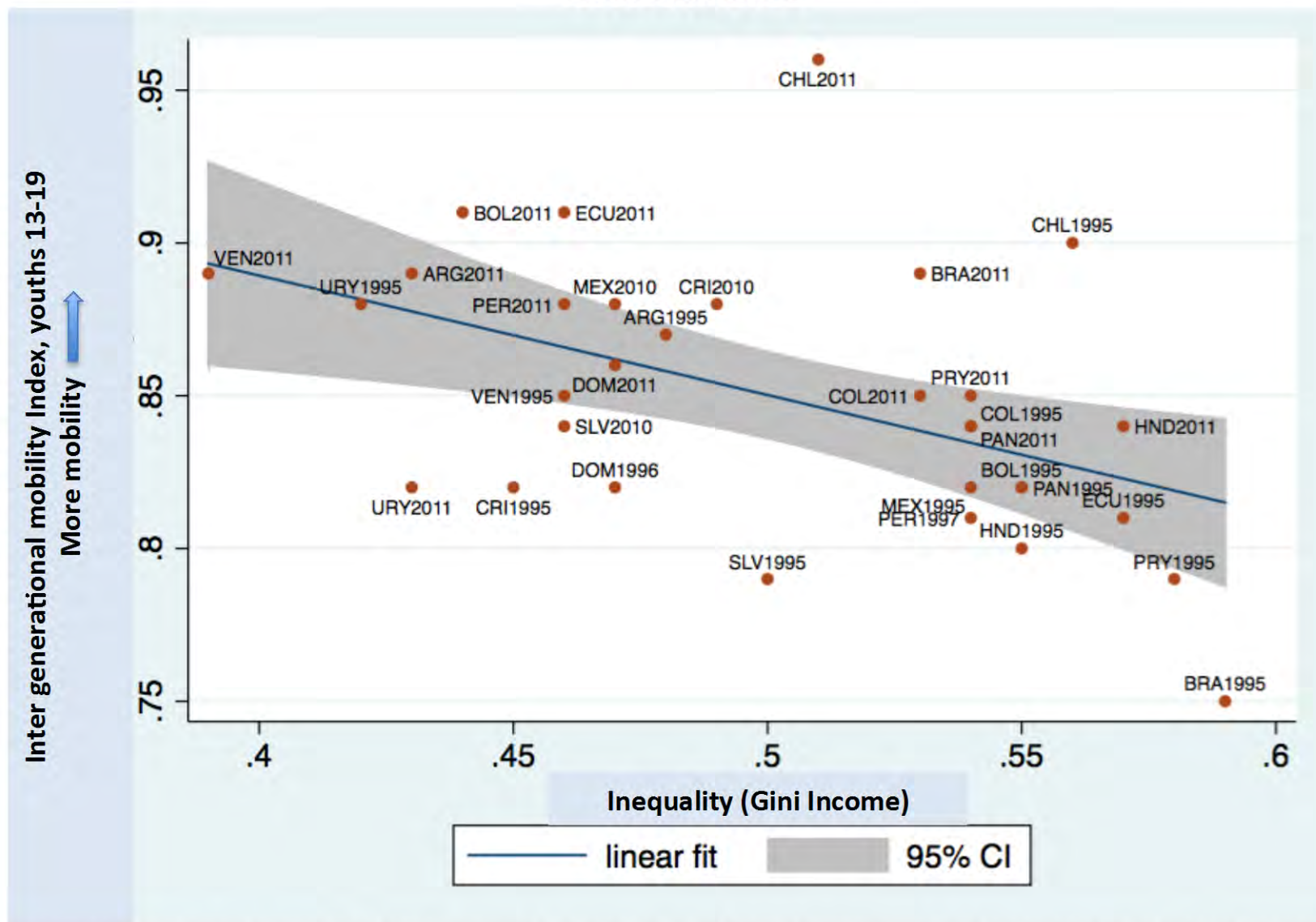
Notes: Educational mobility: Educational Mobility Index for teenagers (13 to 19). Source: SEDLAC(CEDLAS and World Bank) database downloaded May 2013. For Peru and Dom Rep the first observed year is 1997 and 1996 respectively, the last observed year for Costa Rica, El Salvador and Mexico is 2010. Source: SEDLAC (CEDLAS and The Worl Bank) data downloaded October 2014.

U.S. Middle Class shrinking?

Figure 11: Change in Middle Class Size (proportion of population) between 1990 and 2005
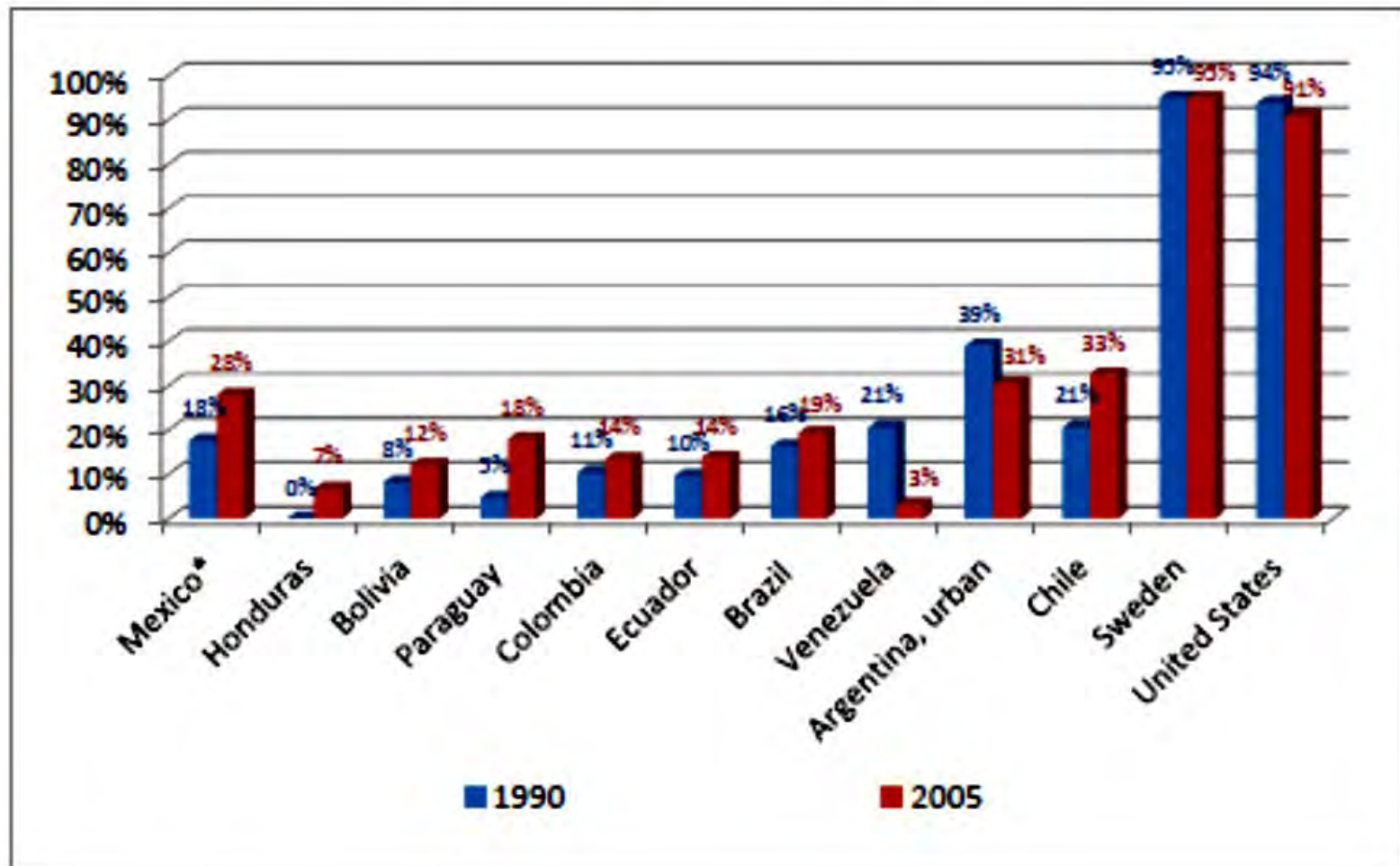
Mobility varies across the US

FIGURE X: Correlates of Spatial Variation in Upward Mobility

Source: Chetty et al. 2014 http://www.equality-of-opportunity.org/
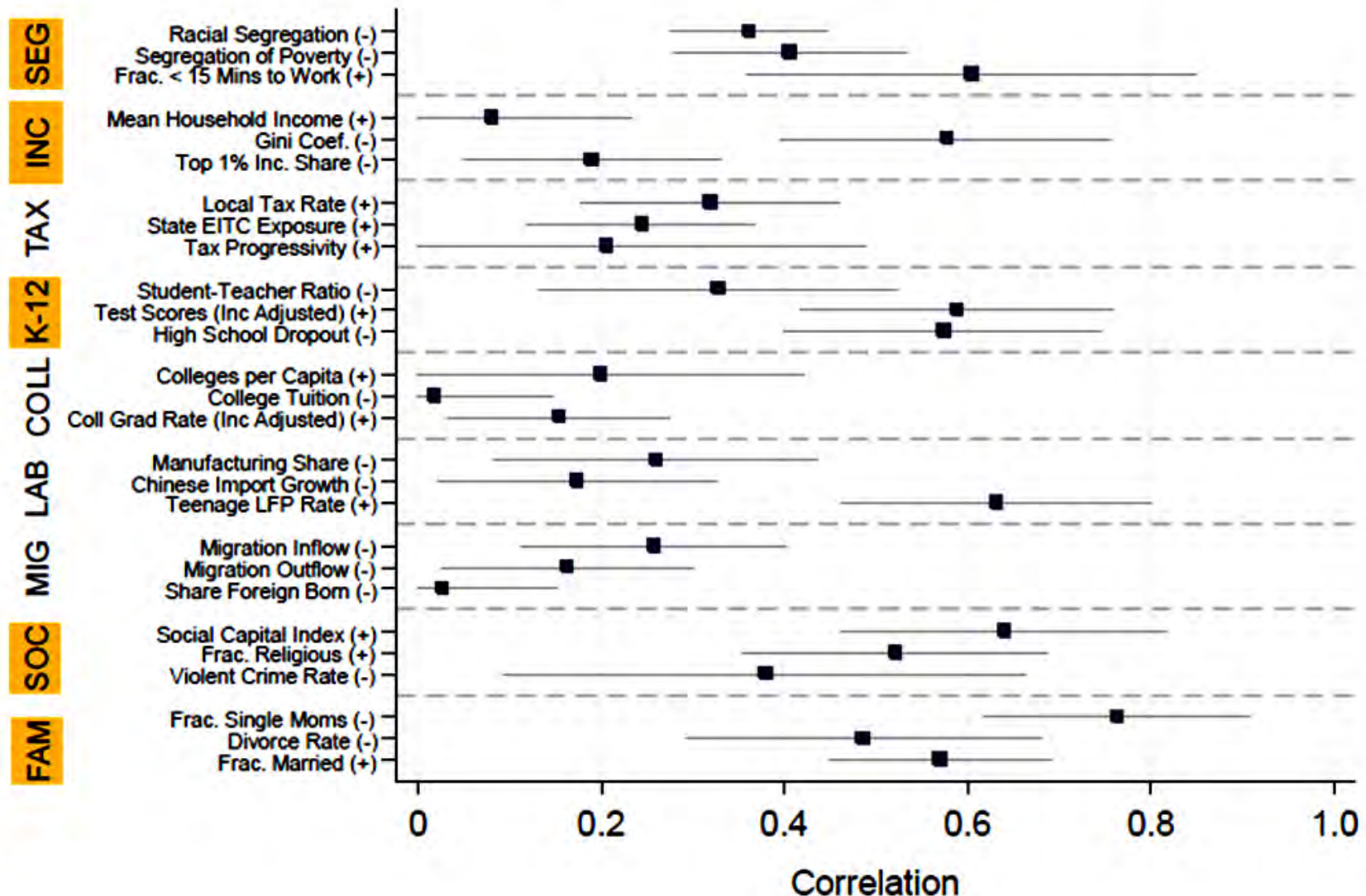
Gatsby curve for major cities in U.S.

Figure 2: Great Gatsby Curve for 60 largest U.S. urban areas

Children of parents in the 25th percentile in 1980-82 climbed on average to the percentile shown on the Y axis by 2010-12

Inequality (Gini) vs Absolute Intergenerational Mobility, 1980-82 Cohort *(see Chetty et al. 2014, Table 8)*.

New York 68, 44
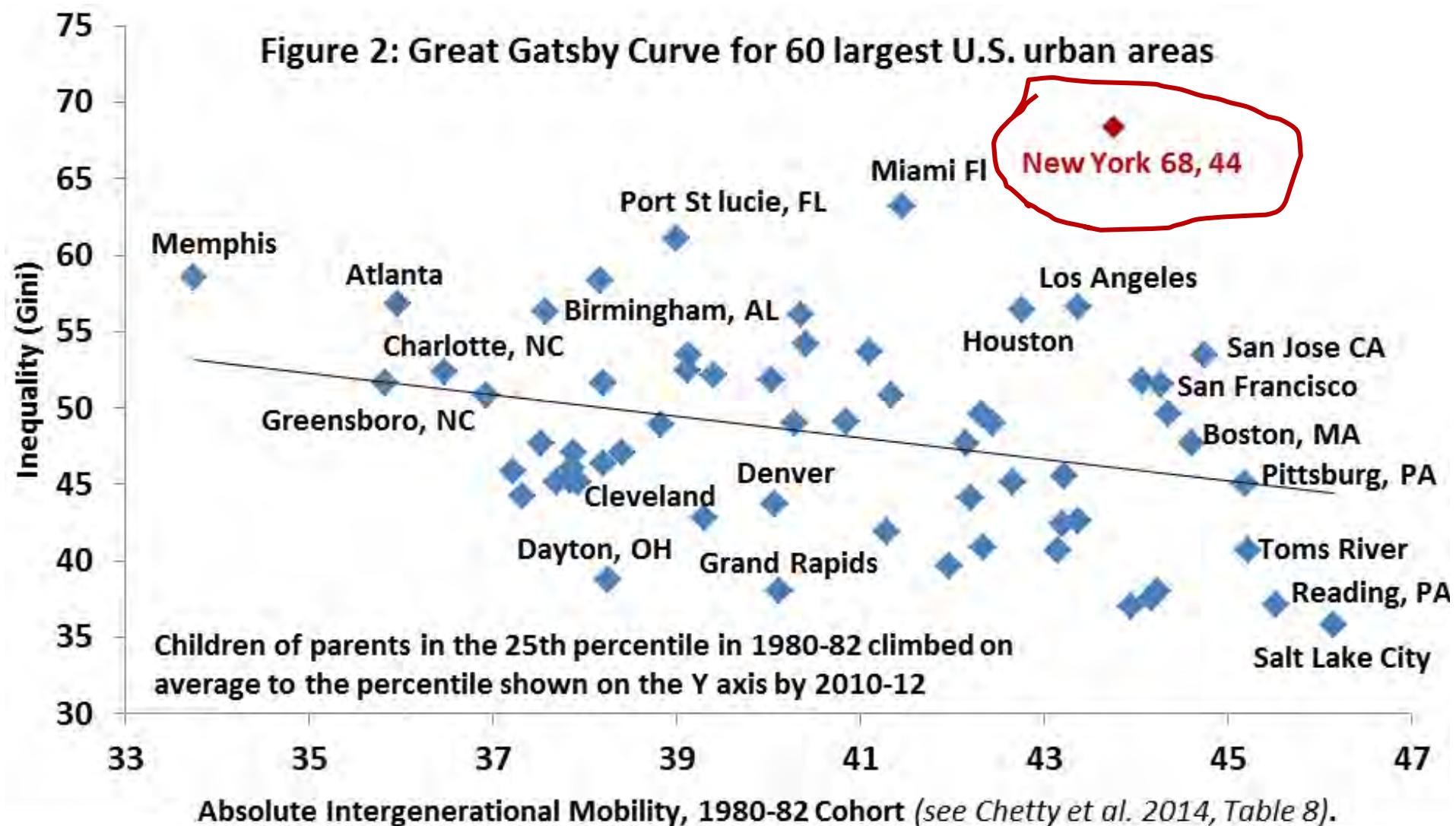
Figure 6B: Fraction of Foreign Born & Absolute Mobility from the 25th percentile, 1980 to 2010, for the 60 largest Commuter Zones

Vertical Axis: Where children with 25th percentile parents in 1980-82 can expect to be in 2010-12, e.g., the children of New Yorkers can expect to move from the 25th to 44th percentile in their

Fraction of urban population Foreign Born

Immigration is associated with higher mobility
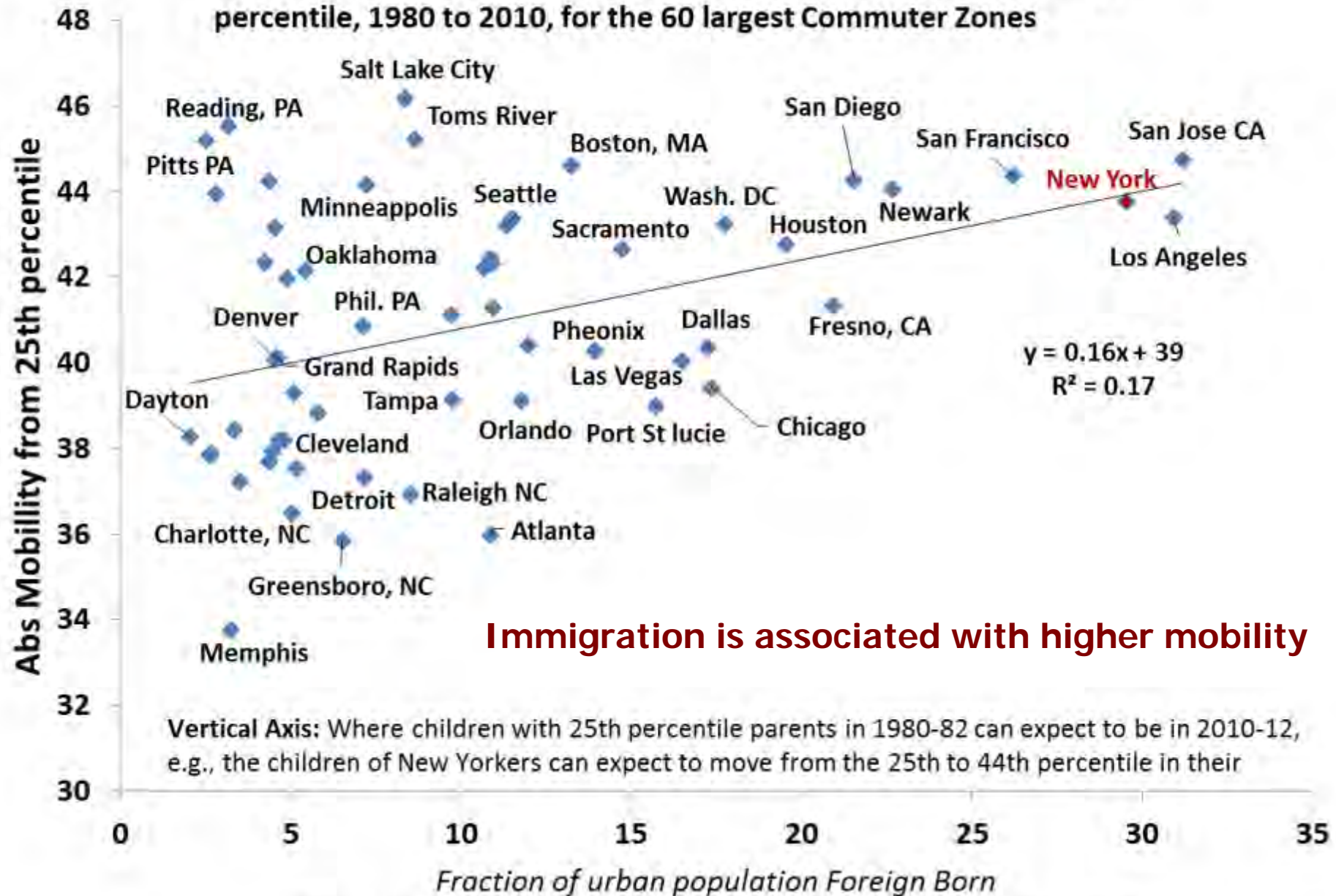
Figure 6B: Fraction of Foreign Born & Inequality in the 60 largest U.S. cities (commuter zones)

$y = 0.5x + 43$
$R^2 = 0.35$

Immigration associated w/ higher inequality

Vertical Axis: The Gini Coefficient is a widely used inequality index, note, a 1% increase in FB share raises the Gini by 1/2 a point, New York City has an astonishingly high Gini of 68 (.68) but w/o its FB share of 30% it would be 53, high but not dramatically higher than the national Gini of .48 (48).

Fraction of urban population Foreign Born

(see Chetty et al. 2014, Table 8, online at http://www.equality-of-opportunity.org *).*

Original title of the Great Gatsby was Trimachio… the most upwardly mobile (but tacky) Italian millionaire ever

"*…the most studied part of [Petronius' Satyricon] is the so-called* ***Cena Trimalchionis*** *"Dinner with Trimalchio." Trimalchio is an incredibly rich freedman (former slave) who hosts an incredibly lavish, and tacky, dinner party….Trimalchio …owns a large library, but… has not read any of it: "I have three libraries, one in Greek and one in Latin." ….you can't buy taste. The food is grotesque; lots of animals stuffed into other animals.*" ***Youngest Son, 2013.***

LatAm Middle Class emerging….

Figure 2B LatAm & Caribbean middle class
(% >$10/day $PPP 2005)

LatAm & Caribb — All Developing Ctys

16% 14% 17% 16% 16% 16% 21% 26%

5.5% 5.4% 5.8% 5.9% 5.4% 5.4% 5.2% 5.7% 7.6% 10%

1981 1984 1987 1990 1993 1996 1999 2002 2005 2008
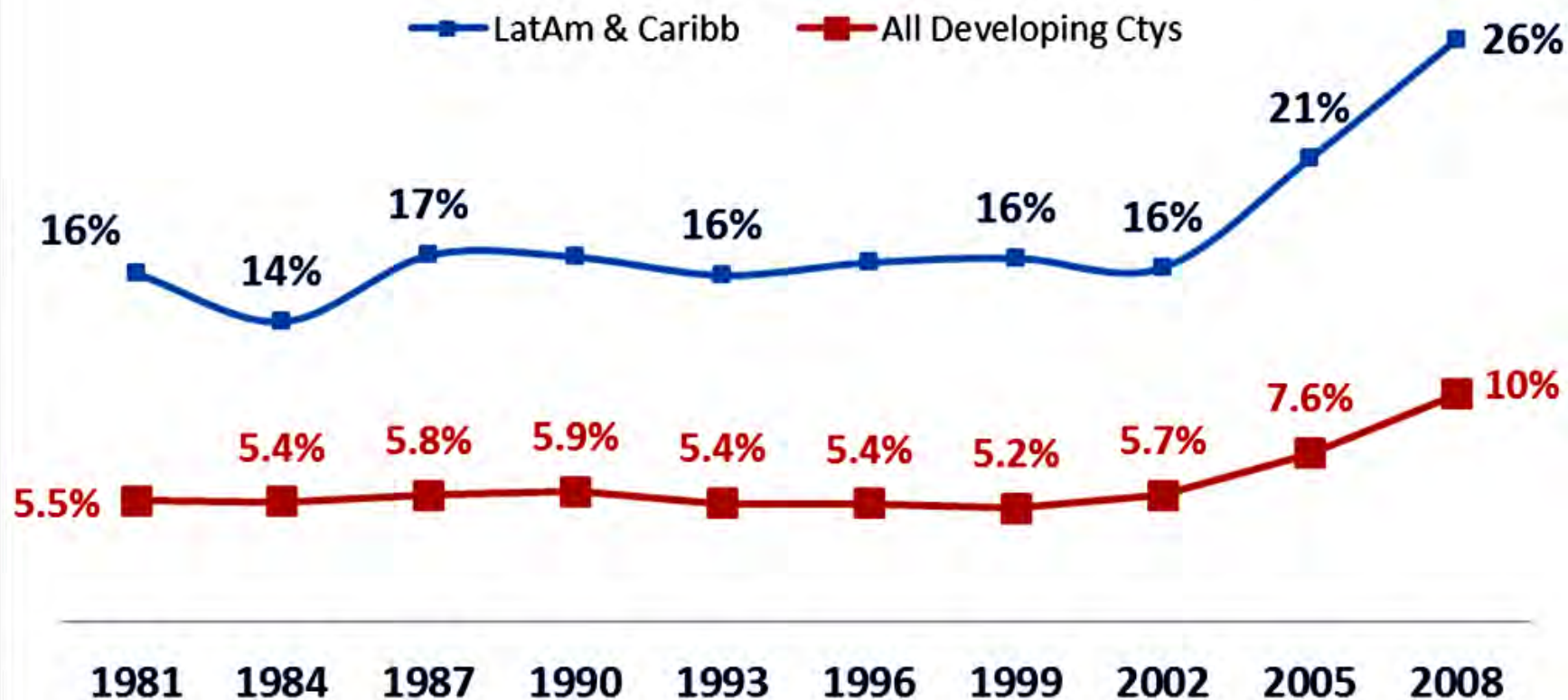
Source: World Bank, Povcalnet March 2012
(http://iresearch.worldbank.org/PovcalNet/index.htm?1

Appendix A: Mobility measures and models

Contents

1 Appendix 1. Data.

There are 3 different sources of data elaborated and applied to this study (see Table 8): Economic Commission for Latin America and the Caribbean (ECLAC/CEPALSTAT) and Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank), World Development Indicators (WDI) Data-The World Bank, United States Department of Agriculture-Economic Research Service (USDA-ERS) and Penn World Table: Center of International Comparisons at the University of Pennsylvania (PWT). SEDLAC(CEDLAS and World Bank) data are an important source for Latin American socio-economic studies because they are comparable between countries and over time. Despite some data intermittence problem, household national surveys represent almost the best source of statistics for LAC countries. The household surveys are mostly nationally representative except those for Argentina, where surveys refer to urban population, which however represents 85 percent of total population. Guatemala is the country with more intermittent surveys and so with less data available, the household surveys were carried on only in 2000 and 2006 and between 2002 and 2004. Bolivia, Colombia and Paraguay cover only the urban areas in the 1990s and Uruguay during the 2000s until 2005. Because of the intermittence problem, Guatemala and Nicaragua has been dropped from skill-premium estimates.

To cover 26 years and 16 countries would require about 400 survey data points. Hence, about 50% of the country/years observations have no survey data. In order to cut the missing observations, we "sample" three year intervals taking the most recent or the middle value from SEDLAC database and the average over the interval from all the other sources' data. Some variables need a further methodological explanation considering their crucial role in estimation process of social mobility and inequality:

1) Mobility [mobi1]: Educational Mobility Index for teenagers (13 to 19). Source: SEDLAC(CEDLAS and World Bank) database downloaded October, 2014. Statistics on educational mobility are computed following the methodology developed in Andersen (2001). The dependent variable is the schooling gap, defined as the difference between (i) years of education that a child would have completed had he entered school at normal age and advanced one grade each year, and (ii) the actual years of education. In other words, the schooling gap measures years of missing education. The Educational Mobility Index (EMI) is defined as 1 minus the proportion of the variance of the school gap that is explained by family background.19 In an economy with very low mobility, family back-

ground would be important and thus the index would be near zero.Source: SEDLAC (CEDLAS and the World Bank).

2) Gini income [gini1]: Distribution among individuals of household per capita income. Source: SEDLAC (CEDLAS and The World Bank database downloaded October, 2014.

3) Gini education [giniedu1]: Gini coefficient for the distribution of years of education. Source: SEDLAC (CEDLAS and The World Bank database downloaded October, 2014.

4) Skill-premium [sk]: hourly wage in main activity in nominal LCU of high educated divided by hourly wage in main activity in nominal LCU of low educated. Source: SEDLAC(CEDLAS and World Bank) database downloaded March, 2015.

5) Palma (10/40), [decpalma]: defined as the ratio of the richest 10% of the population's share of gross national income divided by the poorest 40%'s share. Source: Own calculation based on share of income deciles SEDLAC (CEDLAS and The World Bank) database downloaded February, 2015.

6) Palma (20/40) [palma]: defined as the ratio of the richest 20% of the population's share of gross national income divided by the poorest 40%'s share. Source: Own calculation based on share of income deciles SEDLAC (CEDLAS and The World Bank) database downloaded February, 2015.

7) Bottom 40% [sum2]: the bottom of the population's share of gross national income is measured by the sum of 1st and 2nd quintile. Source: share of income deciles SEDLAC (CEDLAS and The World Bank) database downloaded February, 2015.

8) Top 20% [q55sedlac]: the top of the population's share of gross national income is measured by the 5th quintile. Source: share of income deciles SEDLAC (CEDLAS and The World Bank) database downloaded February, 2015.

9) Top 10% [decile]: of the population's share of gross national income is measured by the 10th decile. Own calculation based on share of income deciles SEDLAC (CEDLAS and The World Bank) database downloaded February, 2015.

10) Net Enrollments Secondary [nes]: Net high school enrollment rate is total share of youths in secondary school, aged 13-19, attending secondary school. Source: SEDLAC(CEDLAS and World Bank) database downloaded March, 2014.

11)Net Enrollments Secondary, Female [nesf]: Net high school enrollment rate is the share of female youths in secondary school, aged 13-19, attending secondary school. Source: SEDLAC(CEDLAS and World Bank) database downloaded March, 2014.

14) Mincer coefficient3 [minc3]: coefficients of educational dummies in Mincer equations, by sector, gender and education (Women, Secondary).Source: SEDLAC(CEDLAS and World Bank) database downloaded March 2015.

15) GDP [ypc]: Gross domestic product per capita, (National currency) 2005 constant prices.

16) Conditional cash transfers[cct]: The CCT variable is a 0,1 dummy, each program's start and end date (if any) were compiled with the research assistance Rafaela Barrera at Fordham University and Sean Higgins at Tulane University using a number of sources, but mainly Fiszbein, A and N. Schady (2009) and Cecchini, Simone and Aldo Madariaga (2011).

17) Beneficiaries of CCTs [bcct] : beneficiaries, % total Population (Source: Cuaderno95, CEPAL) * Total Population (Source IMF, WEO April 2013).

18) Social expenditure [soc]: Per capita social public expenditure by sector (Dollars at constant 2005 prices). Source: CEPALSTAT downloaded October 2014.

Table 1: **Summary statistics**

Variable	Mean	Std. Dev.	Min.	Max.	N	Source
Mobility	84.017	4.272	75	96	121	SEDLAC(CEDLAS and World Bank)
Gini Income	0.509	0.054	0.39	0.62	112	SEDLAC(CEDLAS and World Bank)
Gini Education	0.336	0.077	0.19	0.52	111	SEDLAC(CEDLAS and World Bank)
Skill-premium	3.321	1.008	1.97	6.8	112	Own calculation using SEDLAC(CEDLAS and World Bank)
Palma (10/40)	5.41	9.704	1.88	56.86	113	Own calculation using SEDLAC(CEDLAS and World Bank)
Palma (20/40)	4.994	1.326	2.85	10.17	113	Own calculation using SEDLAC(CEDLAS and World Bank)
Top 40%	11.663	2.042	6.350	16.27	113	Own calculation using SEDLAC(CEDLAS and World Bank)
Top 20%	55.639	4.486	46.38	64.61	113	SEDLAC(CEDLAS and World Bank)
Top 10%	40.108	5.518	30.16	56.86	113	SEDLAC(CEDLAS and World Bank)
Net Enrollments Secondary	60.516	17.582	16.61	86.09	118	SEDLAC(CEDLAS and World Bank)
Net Enrollments Secondary, Female	62.934	17.954	18.59	88.710	107	SEDLAC(CEDLAS and World Bank)
Mincer coefficient 3	0.447	0.187	0.05	1.03	106	SEDLAC(CEDLAS and World Bank)
GDP	8012.01	3247.70	2670	16681	156	Own calculation based on IMF-WEO.
Conditional cash transfers	0.552	0.5	0	1	96	See Table 4 footnotes.
Beneficiaries of cash transfers	7.739	12.931	0.048	51.241	53	See Table 4 footnotes
Social expenditure	12.13	5.932	2.9	27.8	111	ECLAC/CEPALSTAT
Population, total	16.44	1.18	14.66	19.12	160	WDI Data - The World Bank

Table 2: **Cross-correlations matrix**

Variables	mobi1	gini1	giniedu1	sk	palma	decpalma	q55sedlac	decile	sum2	minc3	ypc	nesf	bcct	soc
mobi1	1.00													
gini1	-0.32	1.00												
giniedu1	-0.66	0.43	1.00											
sk	-0.45	0.65	0.53	1.00										
palma	-0.35	0.95	0.46	0.68	1.00									
decpalma	-0.29	0.96	0.47	0.69	0.11	1.00								
q55sedlac	-0.23	0.73	0.38	0.52	0.68	0.09	1.00							
decile	-0.31	0.98	0.42	0.66	0.76	0.62	0.64	1.00						
sum2	0.27	-0.89	-0.36	-0.56	-0.91	-0.14	-0.40	-0.72	1.00					
minc3	-0.26	0.3	0.24	0.23	0.32	0.32	0.29	0.30	-0.27	1.00				
ypc	0.69	-0.35	-0.81	-0.48	-0.30	-0.42	-0.26	-0.44	0.24	-0.27	1.00			
nesf	0.71	-0.35	-0.84	-0.53	-0.36	-0.44	-0.28	-0.47	0.27	-0.27	0.64	1.00		
bcct	0.04	0.20	0.11	0.44	0.14	-0.06	0.16	0.17	-0.10	-0.18	0.24	0.04	1.00	
soc	0.32	-0.16	-0.4	0.13	-0.05	-0.13	-0.26	-0.20	-0.00	-0.25	0.35	0.26	0.28	1.00

For variables definition See Appendix 1A. Data.

2 Appendix 2. Appendix Summary of Solon's (2004) IGM model

Table 3: **Table 1A. Empirical checklist for Solon's (2004) Intergenerational Mobility Model.**

The intergenerational elasticity β falls (mobility increases) when:	Empirical Measure	Evidence
1.Inheritability of endowment form parent to child λ decreases	Fixed/Random effects	Figure 2
2.Human capital becomes less productive so that θ falls	Skill premium	eq (2.7)
3.The earnings return to human capital is lower (p falls)	Mincer coefficient	eq (2.6)
4. More progressive public education investment (γ rises)	Educational spending	eq 2.7, 4.2, 4.3

Source Solon (2004)

Following Becker and Tomes (1979), Solon (1999, 2004) provides a compact model of how intergenerational mobility (IGM) can change over time, reflecting optimal parents' choices in response to changing incomes, returns to human capital as well as to progressive taxation policies (redistribution). Starting with the family's budget constraint parents split lifetime after tax income $(1 - \tau)Y_0$ between their own consumption (C_0) and investment in children (I_0)

$$(1 - \tau)Y_0 = (C_0) + (I_0) \tag{1}$$

This investment produces child human capital via the semi-log production function:

$$h_1 = \theta log(I_0 + G_0) + e_1 \tag{2}$$

where e_1 is the initial endowment of the child an G_0 is government investment in schooling. Child endowments an AR(1) process by assumption:

$$e_1 = \delta + \lambda e_0 + v_1 \tag{3}$$

where λ between 0 and 1 and v is white noise. The earnings equation is:

$$log Y_1 = \mu + ph_1 \tag{4}$$

where p is the return to a unit of human capital.

Families maximizes utility $U = (1 - \alpha)log(C_0) + \alpha log(Y_1)$, where α measures parents degree of altruism with respect to their children.

Finally Solon (2004) adds λ a measure of the progressivity of government spending on children's education such that λ is the rate that government investment decreases. The more positive λ is, the more progressive is the policy.

$$G_0/[(1 - \tau)Y_0] = \varphi - \lambda log(Y_0) \tag{5}$$

Maximizing the utility function with respect to parental investment and collecting terms one obtains the standard IGM regression linking incomes across generations:

$$log Y_1 = \mu* + [(1 - \gamma)\theta p]log Y_0 + pe_0 \tag{6}$$

where the intercept μ is $\mu* = \mu + \varphi\theta p + \theta p\, log\{\alpha\theta p(1 - \tau)/[1 - \alpha(1 - \theta p)]\}$ Note that equation (8) implies that $log Y_0$ is correlated with the error term in equation (10). Solon (2004) shows that, in steady state where the variance of log earnings is the same in both generations, the probability limit of the OLS estimator of the coefficient on log fathers' earnings in (10) is :

$$\frac{(1 - \lambda)\theta p + \lambda}{1 + (1 - \gamma)\theta p\lambda} \tag{7}$$

Thus, the estimated IGE (and intergenerational correlation) will be greater if (1) the heritability coefficient λ is higher so ability is more highly correlated across generations, (2) θ is higher so that the human capital accumulation process is more efficient, (3) earnings returns to human capital are higher so p is larger, or (4) governmental investment in human capital is less progressive so γ is smaller.

3   Appendix 3. Intergenerational Mobility definition.

We use educational intergenerational mobility data from SEDLAC (CEDLAS and the World Bank) database. SEDLAC defines mobility as follows: *"Statistics on educational mobility are computed following the methodology developed in Andersen (2001). The dependent variable is the schooling gap, defined as the difference between (i) years of education that a child would have completed had he entered school at normal age and advanced one grade each year, and (ii) the actual years of education. In other words, the schooling gap measures years of missing education.*
The Educational Mobility Index (EMI) is defined as 1 minus the proportion of the variance of the school gap that is explained by family background (The regression, which includes several controls, is run for youths who live with their parents, they are the only ones with information of parental income and education.) In an economy with very low mobility, family background would be important and thus the index would be near zero.
This measure of social mobility has been proposed by Andersen (2001) and measures the importance of family background in determining the education of teenagers. If family background is very important then social mobility is low.

Andersen (2001) states that: *"The schooling gap is a very simple indicator of future opportunities, but it is well suited for our purpose and has several advantages compared to measures based on earnings or years of education [...] years of missing education is a relatively simple measure that is easily comparable across countries and population groups, it is rarely misreported, and it can be used for teenagers who are still of school age."* The methodology Andersen (2001) uses to calculate the Educational Mobility Index, determines the importance of family background in the following way: first the author selects all the teenagers who live at home for each country, then regress their schooling gaps on two family background variables, the maximum of father's and mother's education and the adult household income per capita, and on a variety of other variables like age, age of head parent at birth of the child, dummies for the presence of older sisters, older brothers, younger sisters, or younger brothers, a dummy for a non-biological relation to the household head, a dummy for female- headed households, a dummy for single parent households, a self-employment dummy for the family head, average regional income, and average regional education. The author then calculates the percentage of the total variance in schooling gaps that can be explained by the two family background variables by applying the Fields decomposition (Fields, 1996) on the regression results.

To calculate the percentage of the total variance, Andersen (2011) calculate a factor inequality weight for each explanatory variable. The latter is the product of the coefficient, the standard deviation and the correlation between the same variable and the dependent variable for each explanatory variable. All factor inequality weights are then scaled to sum to R2 and each factor inequality weight in regression measures what percentage of the total variation is explained by the respective variable. Finally the Social Mobility Index is 1 minus the sum of the two factor inequality weights belonging to the two family background variables; when the index is high, family background is not an important determinant of the education gap and social mobility is high and viceversa.

Hertz et al (2007)*use the terms "persistence," "transmission," and "inheritance" interchangeably to define educational mobility.* To measure the generational persistence in schooling the authors use a standardized persistence measure using Pearson's correlation coefficients for each cohort and country. For the countries in their sample, they measure the standard-deviation difference in parental education corresponding to a schooling difference of standard deviations in the next generation.

Corak, Lindquist and Mazumber (2014) point on the drawbacks of intergenerational mobility (IGE). *"First, it does not differentiate between upward mobility and downward mobility. Second, the IGE is not informative about nonlinearities in mobility. Third, the IGE is known to be sensitive to the length of time averages used and the age at which income is measured in each generation."* They measure mobility by comparing the relative ranks of fathers and sons in the income distribution of each respective generation. The authors call these measures of "directional rank mobility" (DRM). *"For example, if the child's percentile in the distribution is higher than the parents' percentile in the prior generation then this could be classified as upward mobility. We believe that these measures correspond much more closely to what a typical person thinks of as upward mobility compared to the IGE."*