Intergenerational Social Mobility in Mexico and its Regions

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Sections

1. Motivation
2. Rank-rank regression
3. Regionalization, Data
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5. Conclusion

1. Motivation

- There are very few studies of intergenerational social mobility (ISM) using regression analysis for the case of Mexico, also very few studies have estimated ISM at the regional level.
- This is due to a limitation of CEEY's "ESRU Social Mobility Survey" (EMOVI, 2006 and 2011), which does not provide data on household income, the main variable that has been used in regression analysis.
  - EMOVI's indicators of socioeconomic status are categorical variables for education and occupation of head of household, and for household's ownership of durable goods and access to services and utilities, for both current and past generations.
- EMOVI provides data which are representative of the socioeconomic status of head-of-households aged 25-64 years by gender at the national level.

1. Motivation

- Mostly, the analysis of EMOVI data has involved the estimation of intergenerational transition matrices for education and occupation (i.e. across levels of education and types of occupation).
- Indices for "wealth" were estimated from information on households' assets, home characteristics and appliances, and access to services, and this allowed for the estimation of transition matrices for measures of wealth as well.
- More general, indices for socioeconomic status were also estimated, based on all of these factors: education, occupation, and wealth components.
- *Advantage of transition matrices: they provide an estimate of "absolute" social immobility; namely, degree of persistence in low socioeconomic status over the generations*.
- In other words, by estimating the chances of poor children of staying poor in adulthood we are actually studying the dynamics of poverty.

1. Motivation

Mexico, *circa* 2011 (according to EMOVI 2011, CEEY's Social Mobility Report 2013)

- Persistence in lowest quintile is 48 %, for general socioeconomic status based on information on assets, occupation and education (with additional 22 % moving to quintile 2) – Florencia Torche.
  - Persistence at the top quintile is higher (52 % remain, 26 % move to quintile 4).
- It is 35 %, for a wealth index based on households assets, access to services and home appliances only (with additional 25 % moving to quintile 2) – O. Stabridis & R. Vélez Grajales. [Vélez-Grajales et al (2017) reports these indicators at state-level]
  - Persistence at the top is even higher for this index (57 % and 24 %, respectively).
- 28 % of adults with unschooled parents are also unschooled or have incomplete elementary education (33 % have completed elementary education only).
- 52 % of children with father working in agricultural sector, work in the agricultural sector or became low-skilled manual laborers.

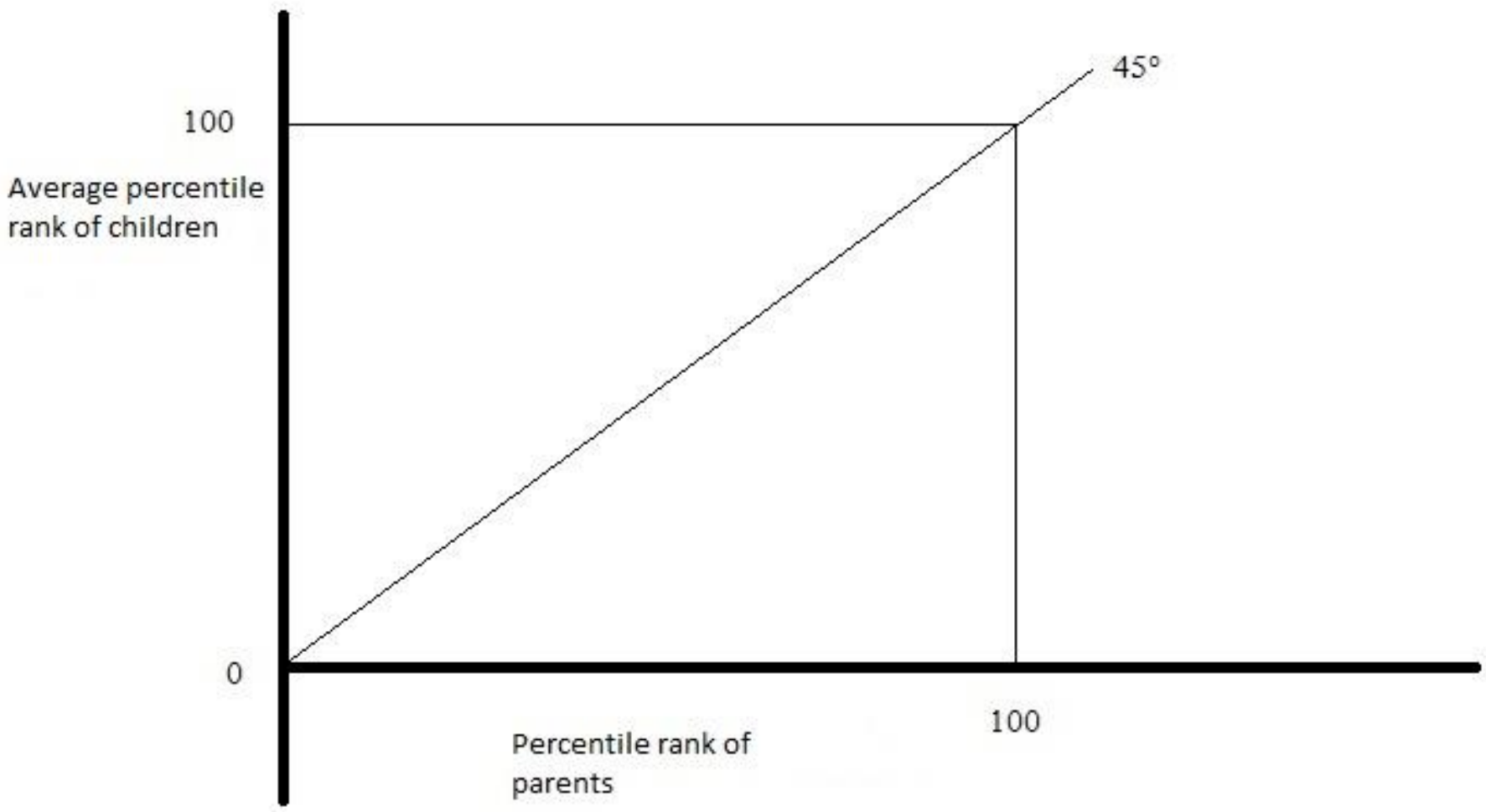
1. Motivation

- Jere Behrman and Viviana Vélez-Grajales (2015), using EMOVI 2011 data computed an index for wealth as well, but also indices for education and occupation, in order to estimate *relative* ISM using regression analysis.
- Thus, they transformed educational levels into years education; and estimated an index of occupational status from occupational categories and job titles, based on the ISEI (Socio-Economic Index of Occupational Status).
- Relative ISM is just the (slope) coefficient of the log-log regression of the indices in the current and past generation. It measures *the degree of persistence of inequalities across generations*.
- For wealth, the coefficient estimated was around 0.60; for education it was 0.33; and for occupational status 0.21, for the whole sample (higher for rural and indigenous population, and somewhat higher for males than for females).

1. Motivation

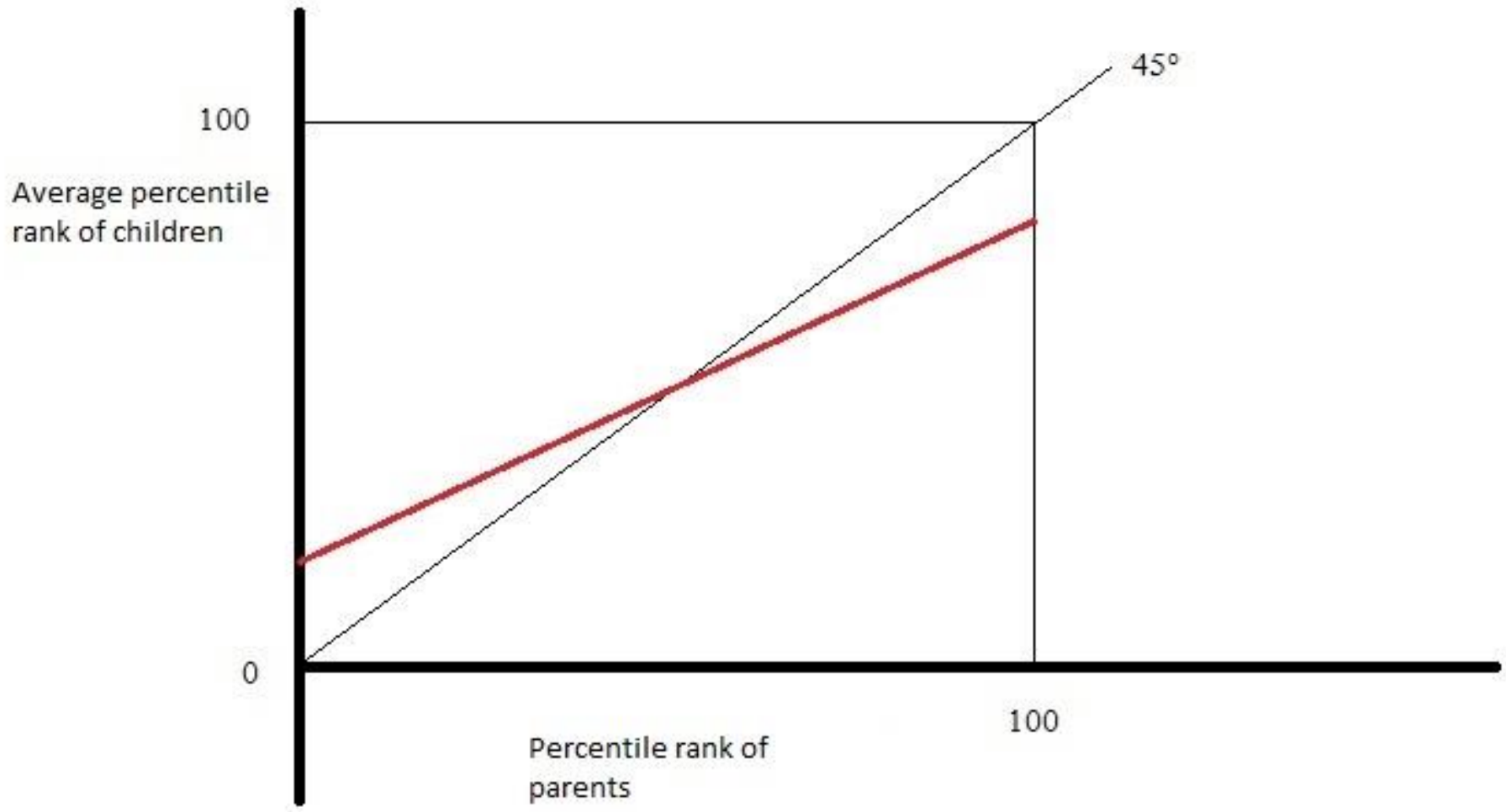
- Here we extend the regression analysis of the EMOVI data in two dimensions: to estimate *absolute* upward ISM, together with relative ISM in a consistent way, and compute these ISM indicators across regions.
- We use rank-rank regression: rather than regressing the indices of socioeconomic status of children on that of their parents, it's the percentile rank of children in the national distribution of socioeconomic status that is regressed on the percentile rank of their parents in the corresponding distribution.
- Rank-rank regressions have many advantages over log-log regressions (see Dahl & Deleire, 2008 , and Chetty et al., 2014). In particular, one can get comparable estimates of ISM, both absolute and relative, across regions of a country; relative ISM is actually an estimate of the correlation coefficient across generations; absolute upward ISM and relative ISM are estimated consistently.

2. Rank-rank regression



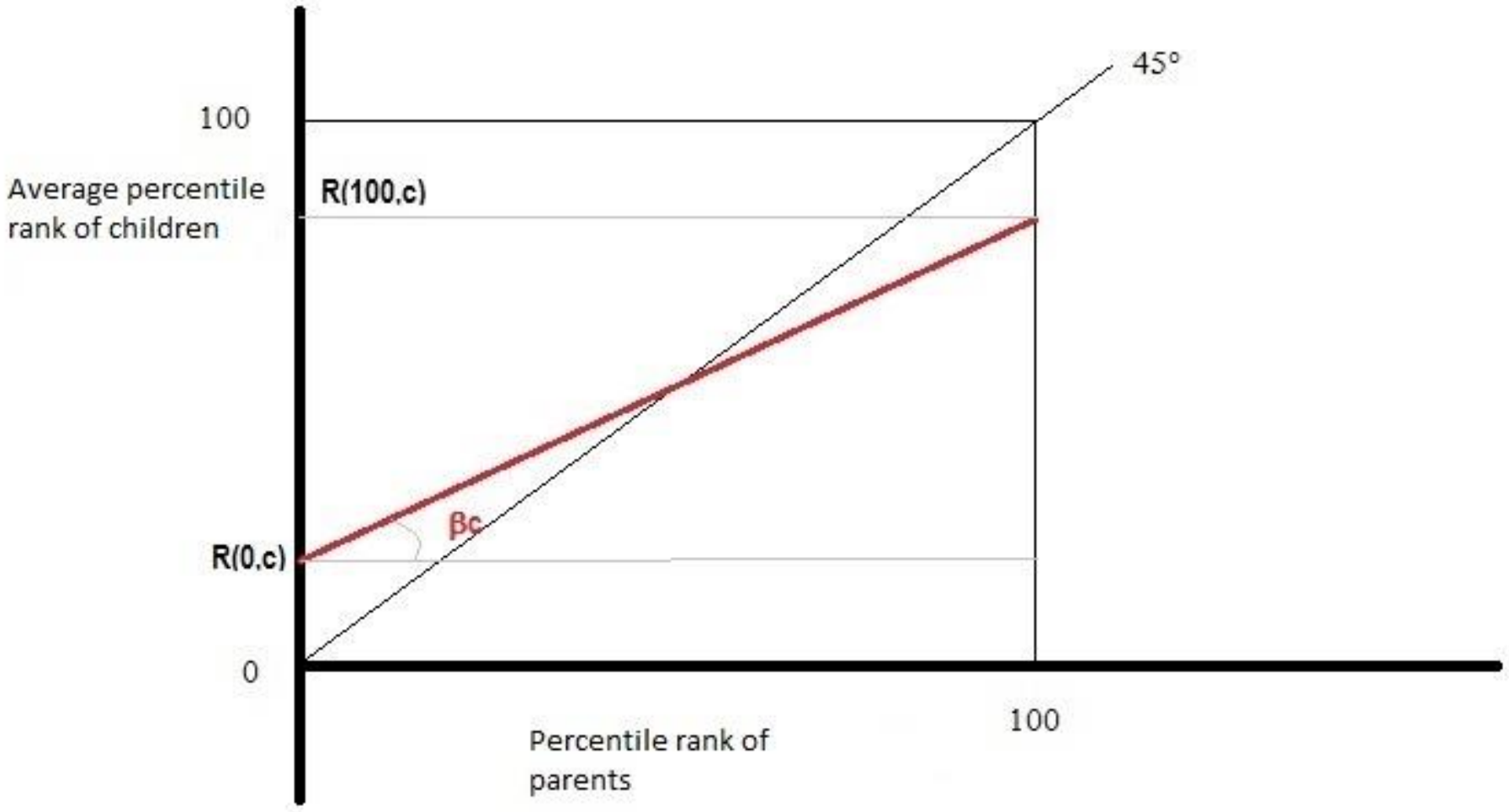
Source: Chetty et al (2014)

2. Rank-rank regression



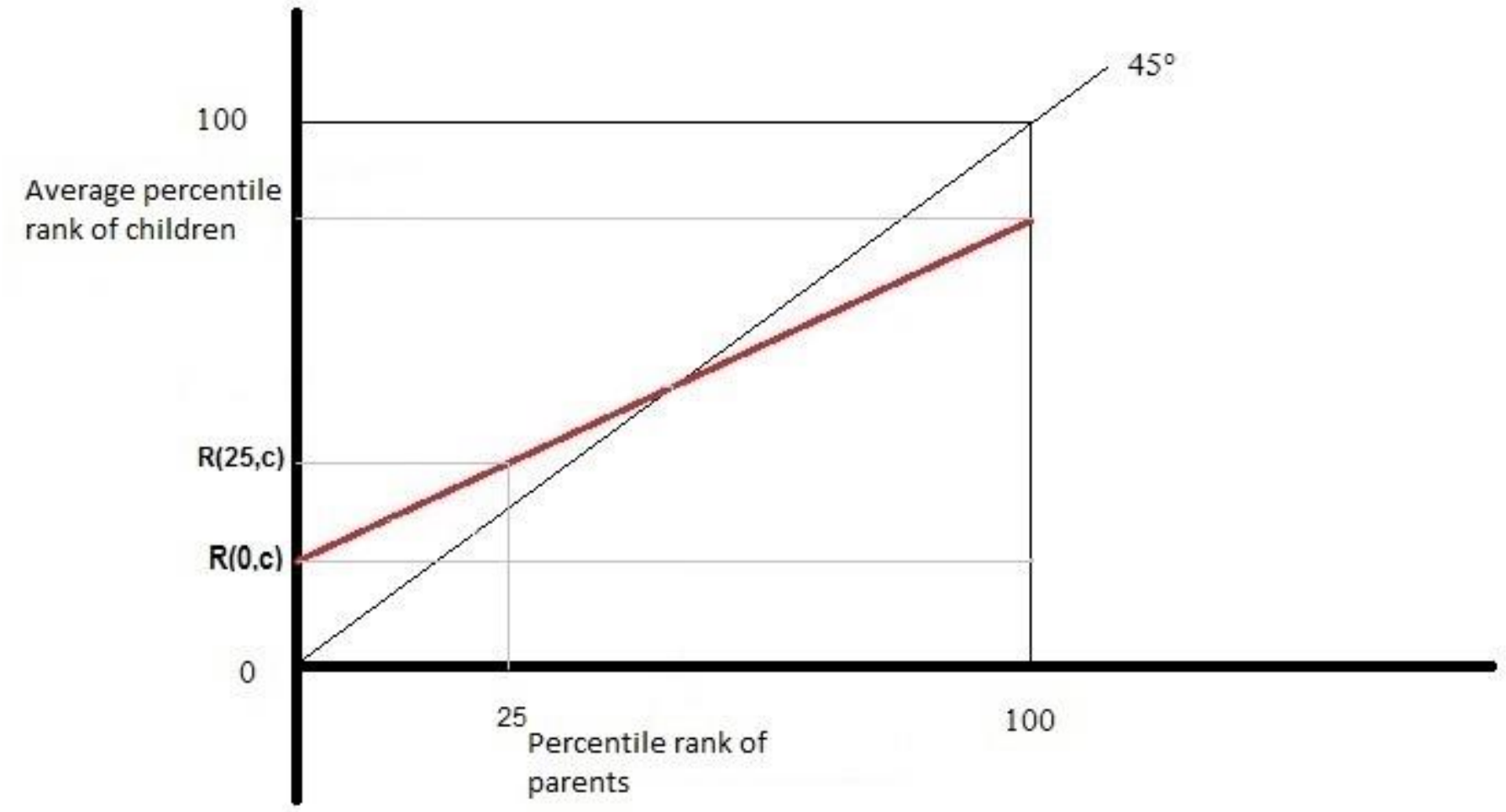
Source: Chetty et al (2014)

2. Slope, Relative ISM



Source: Chetty et al (2014)

2. Intercept and slope, Absolute Upward ISM

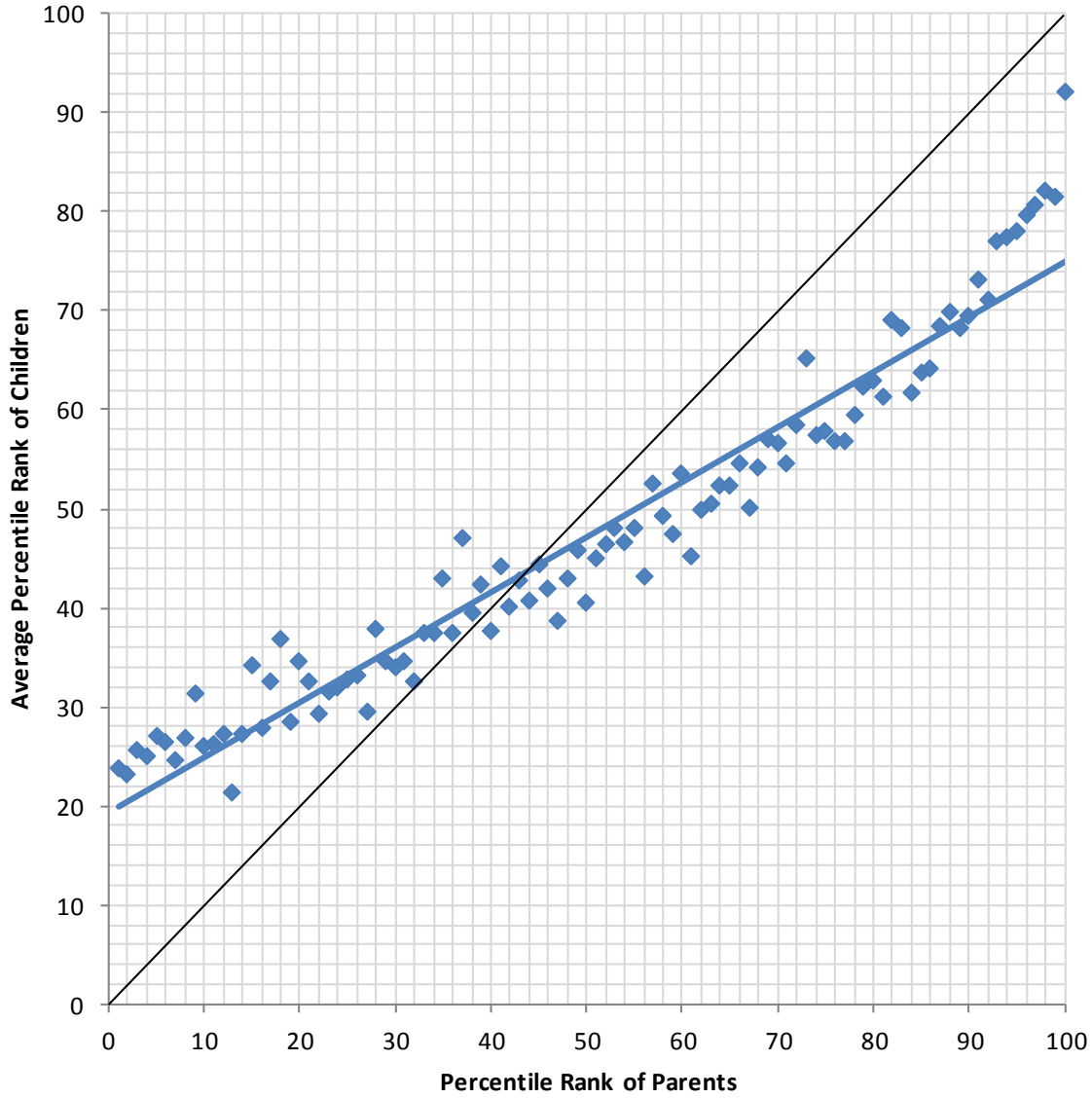


Source: Chetty et al (2014)

3. Regionalization

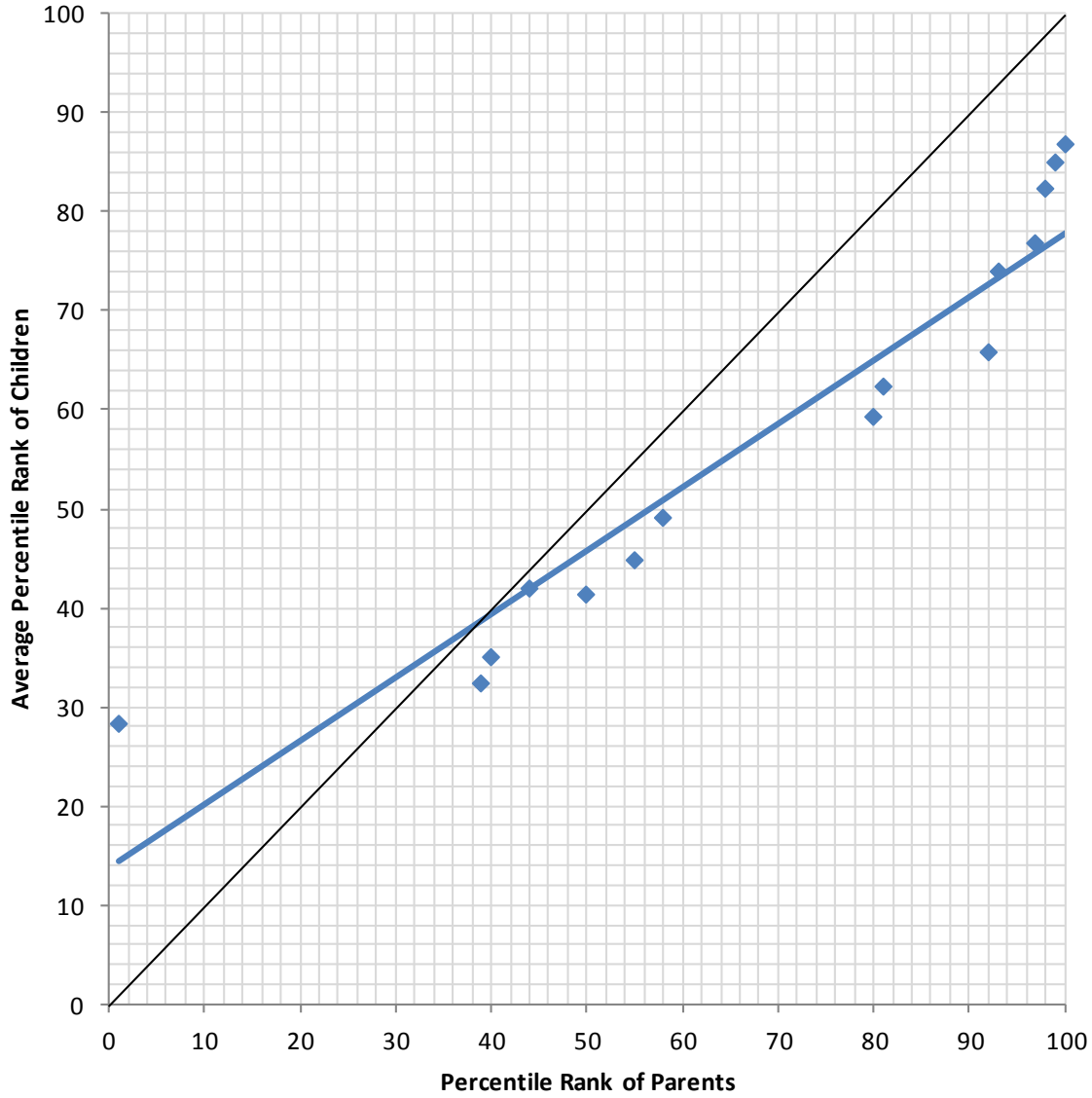
Source: Banco de México

3. Data: Wealth Index



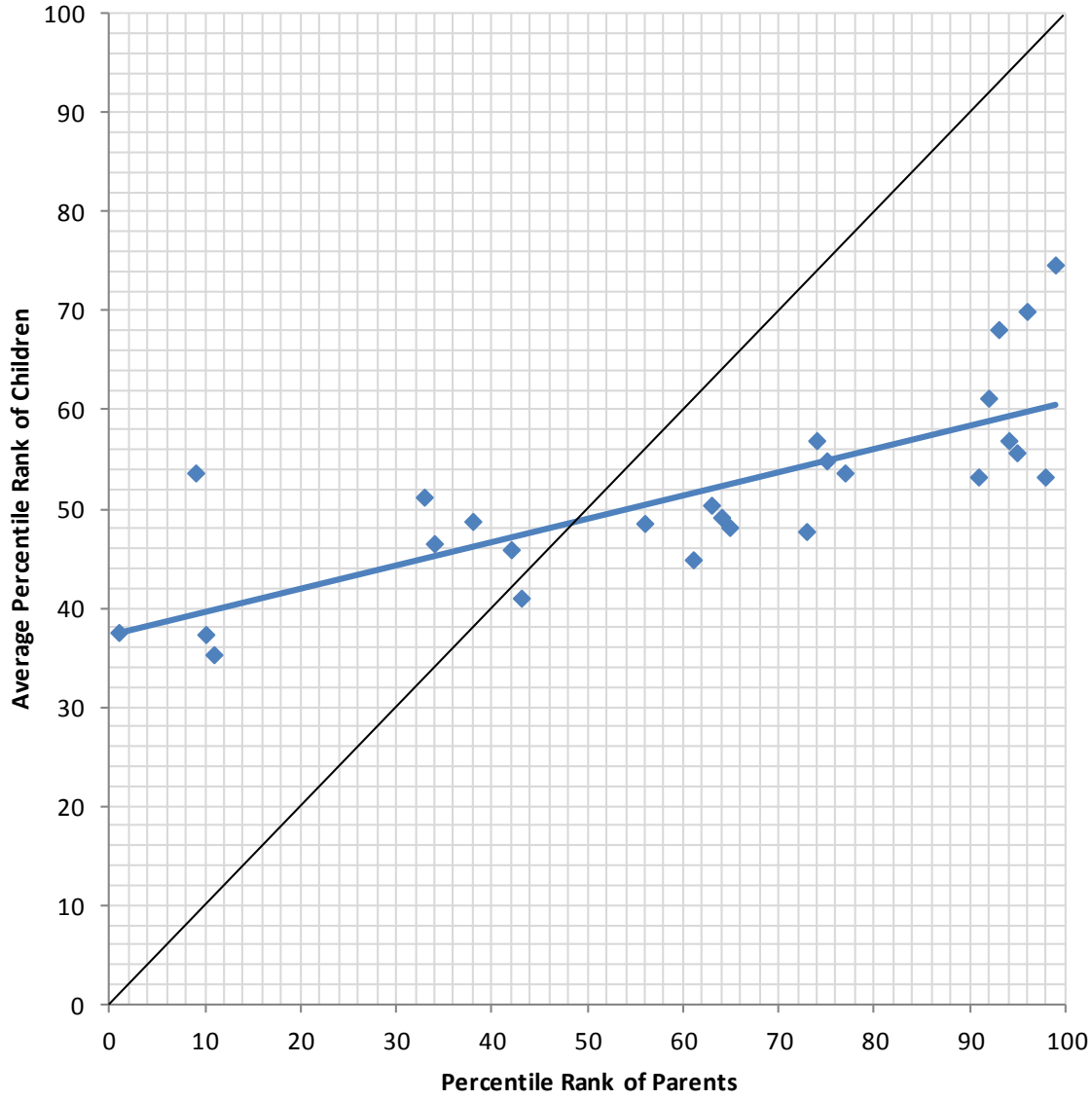
Source: EMOVI 2011 , J. Behrman & V. Vélez-Grajales (2015)

3. Data: Education Index



Source: EMOVI 2011 , J. Behrman & V. Vélez-Grajales (2015)

3. Data: Occupational Status Index



Source: EMOVI 2011, J. Behrman & V. Vélez-Grajales (2015)

4. Results: Wealth and Education

Intergenerational Social Mobility in Mexico and its Regions

Linear Relation between Child and Parent Ranks

Population Aged 25-65, 2011

Wealth						
	α	β	R^2	$\boldsymbol{r_{100} - r_0}$	r_{25}	Obs.
Mexico	*19,9*	*0,54*	*0,31*	***54,1***	***33,5***	*6.626*
North	29,6	0,46	0,24	**46,3**	**41,1**	1.059
North-Central	25,5	0,44	0,24	**44,2**	**36,6**	1.439
Central	19,3	0,55	0,30	**55,0**	**33,1**	2.446
South	13,3	0,60	0,35	**59,6**	**28,2**	1.558
Education						
	α	β	R^2	$r_{100} - r_0$	r_{25}	Obs.
Mexico	*25,9*	*0,44*	*0,26*	***44,0***	***36,9***	*9.421*
North	27,7	0,41	0,24	**40,8**	**38,0**	1.587
North-Central	25,3	0,40	0,24	**39,9**	**35,3**	1.958
Central	26,5	0,44	0,27	**44,5**	**37,6**	3.366
South	24,7	0,48	0,28	**48,0**	**36,7**	2.325

Source: EMOVI 2011

4. Results: Occupational Status

Intergenerational Social Mobility in Mexico and its Regions

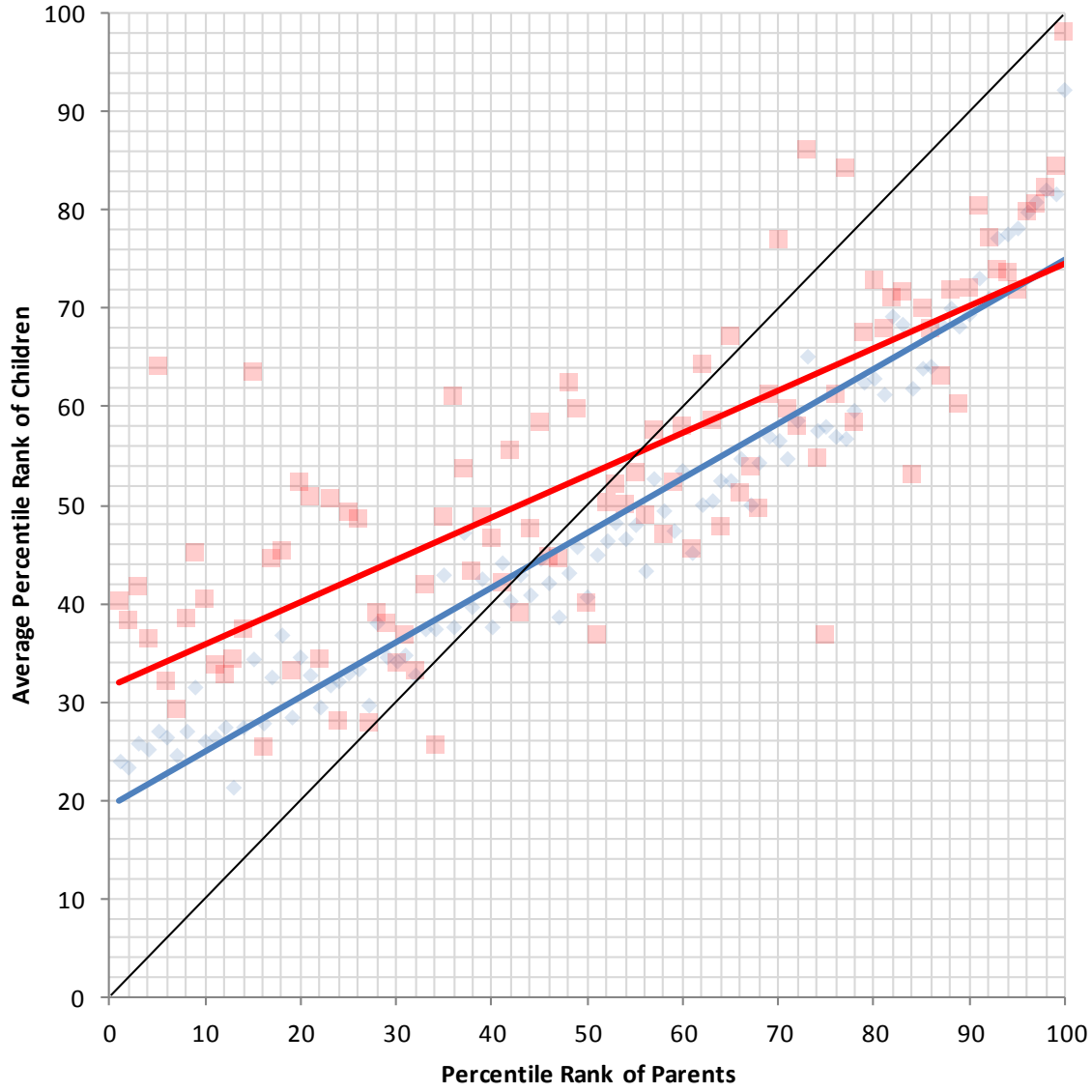
Linear Relation between Child and Parent Ranks

Male Population Aged 25-65, 2011

Occupation (a)						
	α	β	R^2	$r_{100} - r_0$	r_{25}	Obs.
Mexico	*33,8*	*0,26*	*0,08*	***26,4***	***40,4***	*3.822*
North	44,8	0,08	0,01	**7,6**	**46,7**	631
North-Central	32,9	0,28	0,10	**27,6**	**39,8**	827
Central	34,0	0,26	0,07	**25,9**	**40,4**	1.316
South	30,3	0,35	0,14	**35,3**	**39,1**	963
Occupation (b)						
	α	β	R^2	$r_{100} - r_0$	r_{25}	Obs.
Mexico	*33,8*	*0,26*	*0,08*	***26,4***	***40,4***	*3.822*
North	24,9	0,37	0,07	**36,8**	**34,1**	458
North-Central	32,9	0,28	0,10	**27,6**	**39,8**	827
Central	34,0	0,26	0,07	**25,9**	**40,4**	1.316
South	30,3	0,35	0,14	**35,3**	**39,1**	963

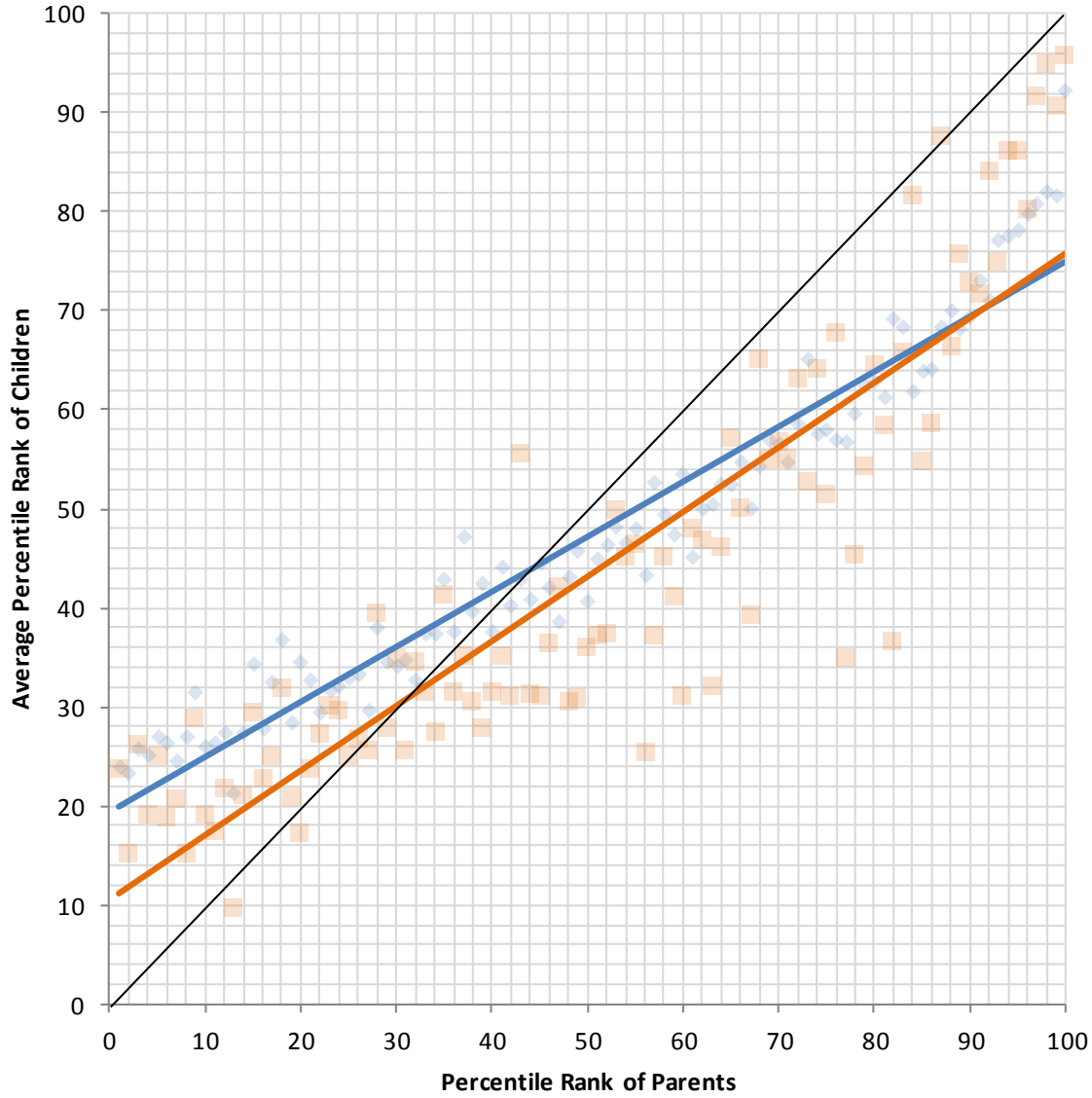
Source: EMOVI 2011

4. Results: Wealth (North vs National)



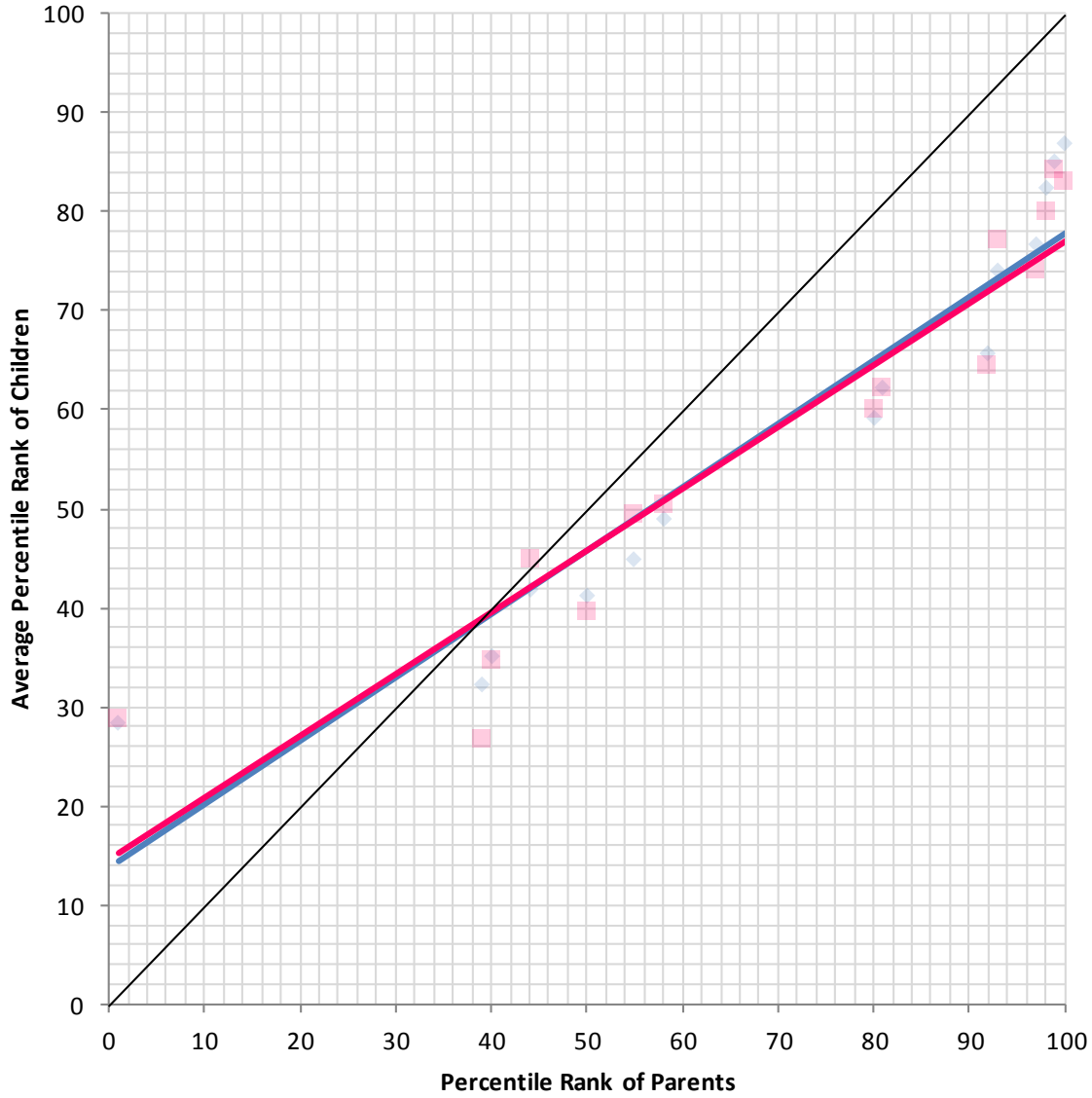
Source: EMOVI 2011, J. Behrman & V. Vélez-Grajales (2015)

4. Results: Wealth (South vs National)



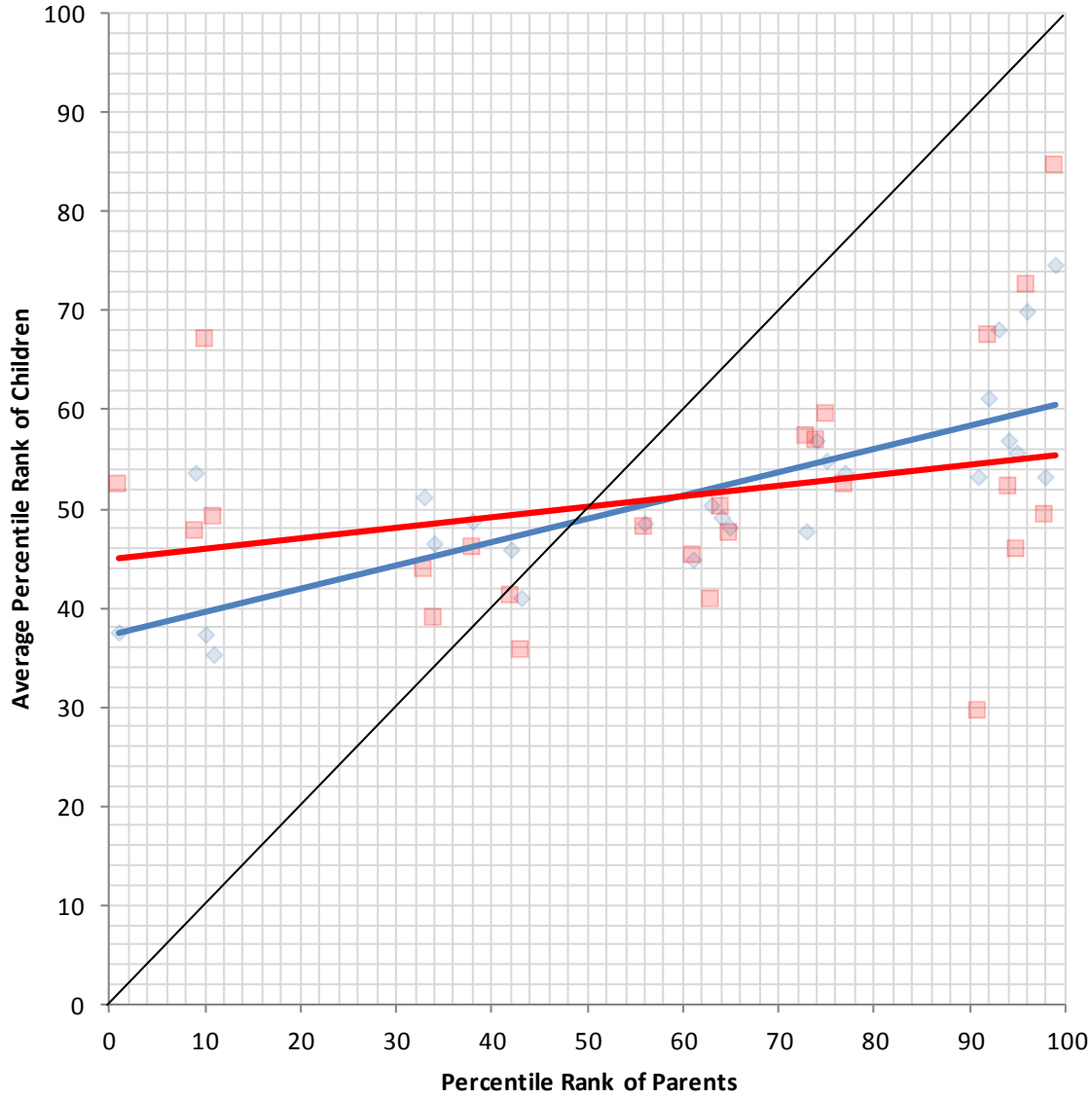
Source: EMOVI 2011, J. Behrman & V. Vélez-Grajales (2015)

4. Results: Education (North vs National)



Source: EMOVI 2011, J. Behrman & V. Vélez-Grajales (2015)

4. Results: Occupational Status (North vs Nat'l)



Source: EMOVI 2011, J. Behrman & V. Vélez-Grajales (2015)

5. Conclusion

- ISM in wealth across regions in Mexico, both absolute and relative, is characterized by a South-North gradient (from low to high ISM).
  - Differences across regions are significant, both statistically and economically.
- Differences across regions in ISM in education are smaller than those in wealth, but the same gradient.
- The results are similar in the case of occupational status; but: 1) estimates only for male population; 2) imprecise, not robust, results for the North region.
- The results are consistent with the regional pattern found by Vélez Grajales et al (2017), for persistence in low socioeconomic status.

5. Conclusion

- Results are largely consistent with the regional patterns of economic inequality and economic growth in Mexico.
- We expect to have even better estimates when data from the EMOVI 2017 survey, which is going to be representative by region as well as by gender, become available.
- We need better methods for estimating indices of educational attainment and occupational status, to get more variability of status of children across the percentile ranks of parents in the national distribution of these indicators.

Thank you.

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