INTERGENERATIONAL MOBILITY, EQUALITY OF OPPORTUNITY, AND THE IMPORTANCE OF FAMILY BACKGROUND IN LATIN AMERICA

A Thesis
submitted to the Faculty of the
GraduateSchool of Arts and Sciences
of GeorgetownUniversity
in partial fulfillment of the requirements for the
degree of
Master of Public Policy

By

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Washington, D.C.
April 9, 2019

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ABSTRACT

Inequality is a prominent public concern because it imposes significant development barriers. Even thought the average years of educational attainment in Latin America have increase it continues to be the most unequal region of the world. It is very difficult for low income parents to aspire higher levels of education for their children because a family socioeconomic status will determine differential access of opportunity. When those at the top of the income distribution in inherited their position, there are more incentives to remain among the wealthiest and far from the unprivileged.

Despite large investments in public education, there are significant differences in access to education, both in terms of quality and quantity, among social classes. Latin American societies in the bottom income quantiles continue to show lower educational mobility rates. Restricted access to education beyond the primary level can help explain the low mobility rates in the region. This paper examines the impact of parent's educational attainment on their future generation's mobility rates using Ordinary Least Squares and Quantile Regressions, as a means of assessing the relationship between the distribution of parental education and income, and their children's educational attainment. The results suggest that limited educational attainment in the parental generation depresses mobility rates for their children.

ACKNOWLEDGEMENTS

The research and writing of this thesis is dedicated to the memory of my grandmother, Paulina Gonzalez de Vargas, my father Mario Vargas Gonzales, my mother Patricia Delgado de Vargas, and sisters. Your love is my strength to fly until I reach the sky. My heart is always warm.
A special recognition to my D.C. family: Sharon and Hazem Baghdadi, Ramsey Baghdadi, Lucie Leblois, my beloved Alexandre and Camille Baghdadi Leblois, Jose Andres, and Patricia Andres. I would also like to thank Professors: Barbara Schone, Andreas Kern, George Akerlof, Jeffrey Mayer, the 2019 Public Policy Class, and the McCourt School of Public Policy staff who have offered their support and friendship during this wonderful journey. There are no words.

Thank you so much,
Andrea P. Vargas Delgado

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

Inequality is a pervasive and globally recognized problem associated with poor educational attainment, reduced adult labor productivity, and increased living costs (Global Panel, 2016). Low educational attainment remains prevalent in Latin America despite its recent economic growth. Since the turn of the century, the decline in the rates of educational attainment in the region has been negligible compared to its economic growth.

Currently, public education costs in Latin American countries represent approximately 3.9% of their annual GDP (ECLAD, 2017).

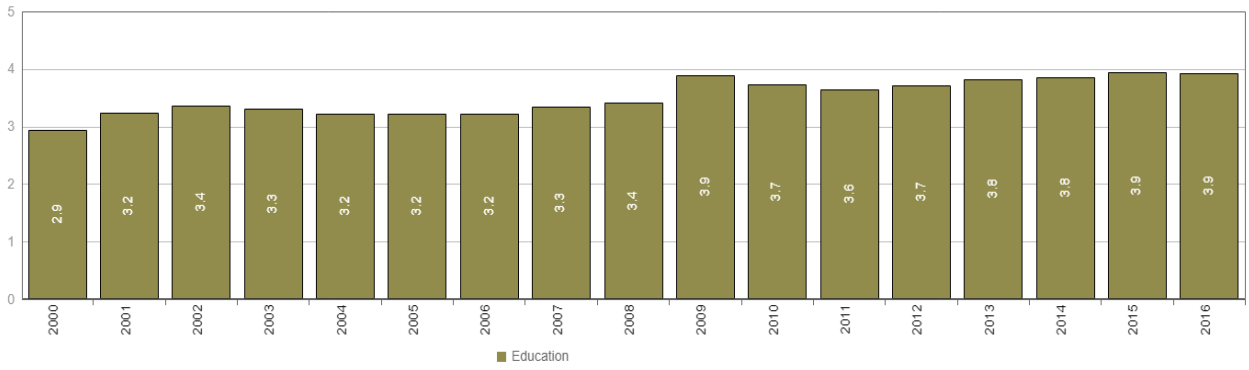

Figure 1. Government Expenditure on Education, 2000-2016 (% of GDP) - Latin America
Source: Economic Commission for Latin America and the Caribbean (ECLAC)

To combat inequality, Latin American governments have increasingly invested in public education programs. Despite these investments, the new generations in the lower socioeconomic strata continue to face significant development barriers, maintaining low rates of socioeconomic mobility.

This study explores the relationship between educational attainment and mobility rates as an indicative factor in order to better understand and address inequality in Latin America.

There are significant differences in accessing education, both in terms of quality and quantity, among social classes. Educational deficiencies and restricted access to education

beyond the primary level can help explain lower mobility rates in the region. This paper examines the impact of a parent's educational attainment on the next generation's mobility rates through the use of Ordinary Least Squares and Quantile Regressions, the current study uses data from the yearly opinion survey Latinobarometro as a means of assessing the relationship between the distribution of parental education and income, and their children's educational attainment. The results suggest that limited educational attainment in the parental generation depresses mobility rates for their children.

Despite the unique challenges present in combating this issue, equality of opportunities could be achievable by securing greater benefits for the disadvantaged segments of society. For instance, when improving access to quality education (Corak, 2013).

BACKGROUND

Between 2004 and 2013, GDP per capita in Latin America increased more than four-fold from $4,271.5 million to $9,274.8 million (World Bank national accounts data, and OECD National Accounts data files). During this same period, the World Bank's GINI index estimates of wealth distribution among the Latin American population residents identify increasing levels of inequality between 2010 and 2013. In the GINI scale a scores 0.0 shows complete equality and a score 1.0 represents complete inequality, in a society's income distribution.

Despite substantial economic growth, Latin America experienced improved ratios of income equality only in three periods: 2004-2005, 2009-2008, and 2009-2010. From 2010 to 2013 inequality increased 11 percentage points (World Bank, Development Research Group).

Figure 2. GINI Index (World Bank Estimate) - Latin America
Source: World Bank, Development Research Group. Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments.

With the UN's 2030 Global Agenda for Sustainable Development, all the United Nations (UN) member countries made a commitment to end poverty, reduce inequalities, and tackle climate change. For fifteen years, the world leaders agreed to mobilize efforts in order to meet the 17 Sustainable Goals (SDGs), which includes the goal to "reduce inequalities within and among countries".

Latin America is still the region with the highest level of inequality in the world despite having made significant reductions in all countries except for Mexico from 2002 to 2008. Understanding the association between inequality and the development of Latin American countries will enable an approach to fostering upward mobility for those stagnated in the lower quantiles (IDB, 2016).

LITERATURE REVIEW

This study hopes to contribute to our understanding intergenerational mobility as part of the broader problem of inequality in Latin America. The concept of intergenerational mobility offers a metric to assess policies targeted at reducing inequality. Parents can have a direct effect on their offspring's future income through many channels: genetic and capital endowments, the role of parental income in determining their offspring's schooling levels, and of course the choice of schools and educational quality. In other words, parents can devote their resources to place their offspring in a better position in the future. A low level of parental investments in education can create an inequality of opportunities for future generations. Therefore, according to Hertz et al. (2007), the correlation between parents' socioeconomic status and their adult offspring's intergenerational mobility reflects society's failure put in place policies that enable offspring from families of different socioeconomic backgrounds to access the same opportunities. Intergenerational mobility therefore offers a window into the generational effects of inequality.

The literature on equality of opportunity builds on Roemer's (1998) distinction between circumstances and efforts. Circumstances include factors for which individuals cannot be held responsible, such as family background, birthplace, gender and race. Efforts include factors like occupational choice, over which individuals do have more control. This distinction allows us to define equality of opportunity as a situation in which individual socioeconomic attainment—measured in the case of this study by educational attainment—is distributed independently of circumstances (Torche, 2014). Under this definition of equality of opportunity, inequalities of outcome are indefensible if, and only if, they stem from differential circumstances (Romer, 2004).

Intergenerational mobility and how equal opportunities are for people in a certain country is widely studied. When family background determines socioeconomic attainment (*i.e.,* when there is less equality of opportunity), intergenerational mobility will be lower. Conversely, a society where socioeconomic attainment does not depend on circumstances, such as family background, then one can say that a society has achieved equality of opportunity. Empirical evidence in Latin America reports that parental education is the most important factor affecting offspring outcomes (Torche, 2014). Moreover, higher parental income and parental education is associated with a decrease on children's achievement gaps, defined as a "persistent disparity in academic performance or educational attainment between different groups of students, such as white students and minorities, or students from higher-income and lower-income households." (Behrman et al., 2000).

Neidhofer (2016) found that increasing returns to human capital in Latin America cause lower ¨intergenerational mobility. Torche (2014,) warns that while education may foster mobility in Latin America, it might create an "inherited meritocracy." Different barriers could keep lower-income individuals from accessing education as a means of securing mobility. Studies suggest that even though there is a meritocratic market in Latin America, it's an unfair society that does not provide equal chances to prepare for competition (Reeves, 2017, p. 75).

Equality of Opportunity and Mobility

Mobility is a multifaceted issue, different mobility indices measure different mobility concepts, which is why Fields (2005) strongly encourages researchers to begin by first defining the concept of mobility to be employed in a given study. Economists tend to think about mobility as "the transformation of a vector of incomes (or some other measure of well-being or economic achievement) in an initial period into another income vector in a second period, and possibly onward to subsequent periods," (Ferreira et al., 2013, p. 24). I need to answer three basic questions to make the economists' mobility concepts useful in this study. First, what is mobility? Mobility can refer to current or permanent incomes, labor earnings, consumption, educational attainment, as well as many other indicators. Second, what are we analyzing: intra-generational or intergenerational? The former refers to the mobility of the same generation over time, while the latter refers to the mobility across generations. Third, what kind of mobility can be capture? In order to answer this last question best, it is useful to build on treatments of mobility according to Ferreira et al. (2013) and Fields (2000).

These treatments further nuance our understanding of mobility by offering three ways of measuring mobility. One measurement focuses on changes in income and economic position in four directions:

- Directional Income Movements: the extent of net upward or downward movement in individual incomes
- Non-directional Income Movement: the extent of gross movement in income (income losses are added to income gains)
- Share Movement: the extent of movement in relative incomes
- Positional Movement: A change in an individual's economic position, as defined by ranks, centiles, deciles, or quintiles

Mobility could also de understand as origin of independence. In this view, “a more mobile society is one where one’s (or one’s parents’) initial position is a less important determinant of one’s future position” (Ferreira et al., 2013, p. 25). Additionally, mobility can be an equalizer of long-term incomes, such that a more mobile society is one where inequality of life-time income is less than inequality of income at any given point in time.

In this paper’s analysis *intergenerational mobility of educational attainment* and the concept of *origin independence* will be used to study whether differences in family background is associated with educational inequalities of opportunity, and therefore with intergenerational mobility. Education, as a key factor of socioeconomic development, could improve equality of opportunity in Latin America so that parent’s initial position is not a determinant of their cohort’s future position.

Why Educational Mobility

The study aims to understand how family backgrounds affect children’s future socioeconomic status, the most accurate quantifier of which is income. However, as mentioned above, in this research the dependent variable is not income, but *educational attainment*. There are three main reasons to focus on schooling instead of income. First, data on educational attainment across generations in Latin America is more readily attainable than comparable income data. Second, education is more comparable across generations than earnings. Third, as emphasized in the literature on returns to education, education is a key determinant of wage earnings. Differences in educational attainment are important for understanding static income inequality (Daude & Robano, 2015). Neidhofer et al. (2017) show that educational attainment is related to economic well-being. In every country and for all cohorts they analyzed there is a clear positive association between average income and educational attainment.

It is still important to understand how intergenerational education mobility would translate into earnings mobility. Previous research shows that education is the most significant pathway by which earnings are transmitted in Brazil. Dunn concludes that when educational outcomes were less dependent on birth status, better earning equality soon followed (Dunn, 2007).

This study understands mobility as the probability of children to achieve more years of education than their parents over a certain period. For the purpose of this analysis it is measured by comparing educational attainment across generations.

Family Background and Mobility in Latin America

Although most studies of inequality in Latin America have had a static perspective, offering snapshots of inequality, the literature has expanded rapidly in the last decade. The main reason why these types of studies have emerged later in Latin America than in developed countries is mostly the lack of panel data, which is the most appropriate data for studying mobility questions. Given that Latin American countries still do not conduct surveys that can provide long-term harmonized panel data survey researchers on mobility have found at least two different ways to address this problem. First, they have constructed synthetic panel data and second, they have conducted a cross-section analysis, with either sibling or intergenerational correlations. Dahan et al. (2001) is one of the few studies of Latin America that has implemented the methodology, finding that there are substantial differences in the region.

A broader variety of studies looked at intergenerational correlations. Here, at least two strategies can circumvent the lack of panel data. First, they trusted research that surveyed parents' ex ante socioeconomic backgrounds. Second, they explored the effect of family background on the academic performance of teenagers living at home. However, this second approach needs to be

focused on children younger than age 16 because adult children who reside with their parents are not representative of their peers, which could lead to a biased sample (Torche, 2014).

The most common tool to measure intergenerational mobility is the amount of change in parent's outcome that can be expected to result from a unit increase in children's income. This slope (usually called beta β) can be standardized in order to take into account differences within the two distributions, which yields a correlation coefficient (Neidhofer et al., 2017). Transitional matrices are a useful tool to predict the probabilities of a child mobility given parent's income.

One of the most recent studies' presents a transition matrix for Latin America is Neidhofer et al. (2017). It shows a substantial persistence in education levels across generations. The authors find that 55.2% of children with low education come from parents with low education. Similarly, 57.9% of those with high educational attainment are the offspring of parents with a high level of education.

Intergenerational Educational mobility in Latin America is still low, although there has been an improvement in recent decades. The literature suggests that the overall low mobility in the region might have possible associations that include the difficulty of attaining higher education, discriminatory policies by employers, or macro-level social discrimination. Torche (2014) reviews empirical evidence from two generations of studies. The first generation of class mobility research in Latin America (conducted in the 1960's), was entirely conducted by sociologists. The second generation of research (conducted in the 1990s) focused on questions of economic mobility. Torche shows low mobility for Latin America; moreover, he finds evidence of income stagnation for those in the lower quantiles. Brazil is characterized by very low economic mobility: 35% of people born into the poorest 20% remain there, and 43% of people born into the richest quintile remain there (Ferreira et. al, 2006). These low levels of income mobility are consistent with the high levels of inequality in the region. In addition, Hertz et al.

(2007) measured the consistency of academic achievement across familial generations in a 42 nation sample over a 50 year period; the seven Latin American countries included in the sample yield the lowest mobility levels of all.

Some literature has also examined the relation between macroeconomic conditions and intergenerational mobility in Latin America. For example, Behrman et al. (1999), suggests that more mature financial markets can unlock more egalitarian mobility up or down the social ladder. According to their results, Greater per-child spending on primary education, and improving the quality of available primary and secondary schooling, had a positive effect on social mobility between generations. Conversely, higher public spending on tertiary education might reduce intergenerational mobility Dahan, M. et al. (2001). Neidhofer (2016) found that economic growth drives up inequality and reduce intergenerational mobility, but that this can be counteracted with public expenditures on education. He concludes that a large dispersed distribution of mobility overall negatively affects access of opportunity.

The literature on intergenerational mobility in Latin America is expanding, as a way of measuring equality of opportunity in a society. Given the socioeconomic context of the region, the results of this research can have important implications for public policy aimed at leveling the playing field. However, as Torche (2014) points out, mobility is not a perfect indicator. "Some mechanisms for the intergenerational persistence —for example, family socialization and DNA traits — would exist even in a society in which institutions fully compensated for socioeconomic disadvantages," (Torche, 2014, p. 624). In addition, when comparing mobility levels across countries, Torche suggests it is important to note the assumption that genetic inheritance and family socialization do not have a great variation across nations in the world (Torche, 2014).This seems to be a reasonable assumption, especially at the regional level.

Studies that have presented transition matrices (Couch, K. &Lilalrd, D., 1998), kernel density (Corak, M., Heisz, A., 1999) and quintile regression techniques (Grawe, N., 2004)conclude that intergenerational mobility varies across the distribution of earnings. Little research on Latin America's intergenerational mobility uses quintile regression. However, as mentioned above, Neidhofer et al. (2017) used a transitional matrix, which shows that in Latin American countries educational persistence at the top of the income distribution is high and has not changed substantially over time. Similarly, Behrman et al. (2001) compute mobility matrices for Brazil and Colombia (the two least mobile countries in their sample). Surprisingly, they find the ratio of upward bound mobility for children at the bottom of the bottom tier is substantially higher than the ratio of the downward bound mobility of children at the top tier.

Navarro's (2007) study of intra-generational mobility in Argentina uses a quintile regression approach. His main result is that individual's past income is a more influential variable in explaining an individual's current income at the middle and the bottom of the income tiers than individuals at the top tier. In addition, Andrade et al. (2003) compute a quintile regression in order to test the effect of borrowing constraints on intergenerational mobility in Brazil. They find that the degree of intergenerational mobility is greater for the upper quintiles, which is consistent with the presence of borrowing constraints affecting lower quintiles.

While there is plenty of literature on social issues and educational intergenerational mobility in Latin America, there are no studies measuring educational mobility across income quantiles. This study focuses on the effects of inequality on the economic development of the countries using the quintile regression approach. The methodology allows for distinctions in the children's outcomes depending on socioeconomic status. Its underscores the question of the effect of family background on access to equal opportunity, while using different data and adding additional control variables. If parent's socioeconomic background is significantly

related to their offspring's future well-being, then it may be that the current educational system in Latin America is preventing mobility of low-income individuals trapping them in persistent stagnation.

DATA AND DESCRIPTIVE STATISTICS

Using Latinobarometro data on self-reported denomination, this report wants to study the impact of parental education on the educational attainment of their children in Latin America, both on the average and along the distribution of education. Latinobarometro (Latinobarometro, 2017) is an annual opinion survey, which records individual and household characteristics of country-wide samples in eighteen Latin American states since 1995. The 20,000 (twenty thousand) observations per year represent 600 million inhabitants of the region - on average a thousand observations per country. Latinobarometro Corporation is a private non-profit organization dedicated to the collection and publication of the data. Its indicators capture opinions, attitudes, behavior and values of individuals in Latin America.

Conceptual Framework

Based on Latinobarometro harmonized household database and information discussed in the Literature Review section, I hypothesize that parental educational attainment can predict the years of education of the children. The prediction of the dependent variable, Children Educational Attainment (E) is a discrete variable that reports the number of years of education that a child will have given his or her parents educational attainment. The independent variable, Parental Education (PE) is a continuous variable that represents the number of years of education of the parent. My analysis also includes several controls: parental income (PI), gender (male or female), and ethnicity (mestizo, indigenous, white, black, and others).

Only respondents of age 25 or older were considered in the analysis, given that this is the average age an individual is expected to finish studying (Barro & Lee, 1993). Some studies use a lower bound of 23 instead of 25.

Limitations

There are three main restrictions in the sample: i) Retrospective Questions, ii) Demographic Controls, and iii) Bias in the Dependent Variable.

i) Retrospective Questions

The biggest limitation in this analysis is the lack information of the parent's real income in dollars and number of years they attended to school. For this reason, I selected retrospective questions on both income and parental education. As these two proxies' variables were categorical, and a numerical value was needed to run our model, I generated "PI" using a scale poor - rich of the parents and "PE" assigning the equivalent number of years to each educational level.

ii) Demographic Controls

In order to include demographic controls such as age, race, gender, income, along with region, I needed to drop all the years prior to 2007.

I also excluded years 2015, 2016, and 2017 from the study because the parental income question was not included in those years and it is a key control variable to predict children educational attainment.

iii) Bias in Dependent Variable: "Educational Attainment"

The average of educational attainment by country and year calculated using Latinobarometro survey differed from the averages reported by Barro &Lee (2016) and the World Bank EdStats (2004-2013); however, as Figure 3 shows, there are no clear differences between the distributions.

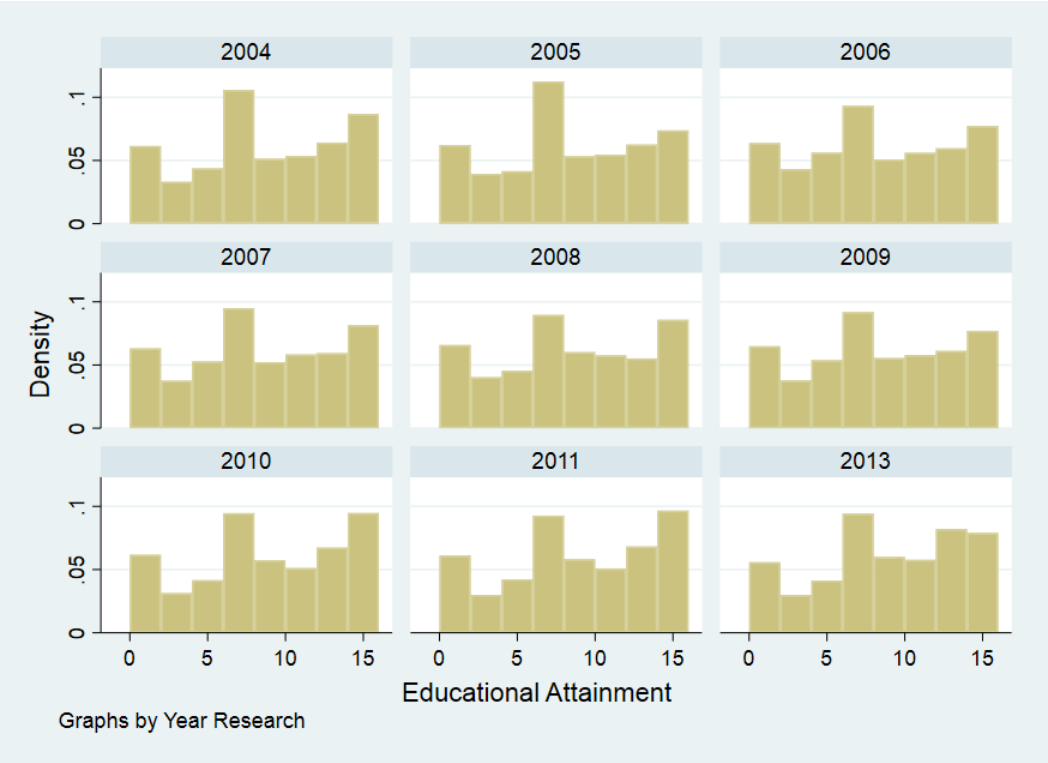

Figure 3. Educational Attainment Distribution per Year- Latin America
Source: Latinobarometro

Descriptive Statistics

The key lesson of this section is that Latin America is a heterogeneous region with drastic inequalities. With such diversity, between 2004 and 2013, educational attainment rates increased on average in every country, except Uruguay. The standard deviations were also reported because it is important to see how disperse children and parents educational attainment was from the country's mean per year. An interesting finding is that on average, there are not significant differences between the standard deviations of parents and children levels of education among countries from 2004 and 2013.

Table 1 provides the mean educational attainment and the standard deviations per country per year. When analyzing average levels of parental education in Latin America, Chile, Argentina, and Venezuela, have the highest, while Guatemala, Nicaragua, and Honduras report the lowest. On average, educational attainment is 10.17 and 4.75 years for the countries with highest educational levels and for countries with the lowest educational levels, respectively.

Table 2 shows the mean parental educational attainment and the standard deviations per country per year. When analyzing average levels of education in Latin America, Chile, Argentina, and Uruguay, have the highest, while El Salvador, Honduras, and Guatemala report the lowest. On average, parental educational attainment is 7.09 and 2.63 years for the countries with highest educational levels and for countries with the lowest educational levels, respectively.

Table 1. Mean Educational Attainment per Country per Year

	Year Research								
	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2013**
Argentina	7.02	6.33	6.39	7.33	7.00	7.17	7.47	7.21	7.22
	(3.93)	(3.93)	(4.01)	(4.19)	(4.15)	(4.14)	(4.30)	(4.20)	(3.87)
Bolivia	3.76	4.67	3.97	4.11	4.14	3.99	3.90	3.97	3.89
	(5.13)	(5.37)	(4.79)	(5.39)	(5.02)	(4.94)	(4.86)	(5.27)	(4.84)
Brazil	3.22	3.29	3.78	3.55	3.48	3.68	3.61	3.96	4.15
	(3.85)	(3.77)	(3.94)	(4.04)	(3.95)	(4.16)	(4.02)	(4.08)	(4.22)
Chile	7.91	7.92	7.10	7.08	7.72	7.31	7.79	8.44	7.62
	(4.59)	(4.51)	(4.67)	(4.74)	(4.53)	(4.71)	(4.55)	(4.45)	(4.51)
Colombia	4.75	4.96	4.78	4.49	4.51	4.11	6.42	7.49	6.73
	(4.57)	(4.23)	(4.40)	(4.25)	(4.30)	(4.52)	(5.43)	(4.86)	(5.45)
Costa Rica	4.66	4.56	5.22	5.17	4.41	5.07	5.47	5.14	5.49
	(4.22)	(4.38)	(4.66)	(4.40)	(3.97)	(4.49)	(4.68)	(4.46)	(4.74)
Dominican Rep.	4.31	4.18	4.91	4.04	4.62	4.84	3.70	4.41	4.83
	(4.93)	(4.62)	(4.38)	(4.79)	(4.64)	(5.02)	(4.66)	(4.93)	(5.51)
Ecuador	5.43	4.83	4.59	4.50	4.72	4.42	5.12	5.21	6.83
	(4.04)	(4.11)	(4.41)	(4.24)	(4.37)	(4.27)	(4.34)	(4.24)	(4.15)
El Salvador	2.48	3.46	2.54	3.21	2.16	1.83	3.04	2.98	3.18
	(4.02)	(4.54)	(4.28)	(4.54)	(3.91)	(3.63)	(4.39)	(4.17)	(4.26)
Guatemala	2.32	2.52	3.81	1.98	1.98	2.01	2.16	2.10	2.59
	(3.56)	(4.12)	(4.37)	(3.25)	(3.56)	(3.50)	(3.57)	(3.37)	(3.88)
Honduras	2.47	2.78	2.42	2.64	2.30	2.31	3.20	3.36	3.33
	(3.45)	(4.04)	(3.85)	(3.65)	(3.53)	(3.60)	(3.92)	(3.94)	(4.11)
Mexico	6.07	5.94	3.89	4.16	4.40	4.10	4.17	4.00	4.06
	(4.66)	(5.00)	(4.44)	(4.45)	(4.73)	(4.32)	(4.47)	(4.33)	(4.57)
Nicaragua	3.12	2.81	2.60	3.08	2.98	3.28	3.31	3.00	2.48
	(4.32)	(4.50)	(4.25)	(4.42)	(4.28)	(4.50)	(4.57)	(4.48)	(3.98)
Panama	4.41	5.07	5.25	4.99	3.65	4.53	5.66	6.15	6.15
	(4.13)	(4.54)	(4.75)	(4.78)	(4.57)	(4.66)	(4.74)	(4.96)	(5.20)
Paraguay	6.72	4.72	4.63	5.17	5.48	4.55	5.54	4.64	4.15
	(4.66)	(3.82)	(3.78)	(4.22)	(4.02)	(3.62)	(4.00)	(4.06)	(2.55)
Peru	6.75	5.62	5.55	5.93	5.55	6.27	6.02	6.24	6.37
	(5.04)	(5.24)	(5.19)	(5.25)	(5.27)	(5.28)	(5.05)	(5.13)	(5.09)
Uruguay	6.61	6.46	6.85	6.61	6.25	6.50	6.47	6.85	6.88
	(4.23)	(4.07)	(4.04)	(4.28)	(3.55)	(3.76)	(3.80)	(4.13)	(3.90)
Venezuela	4.76	4.72	4.99	4.93	6.75	3.71	5.50	7.40	6.11
	(4.69)	(4.30)	(4.31)	(4.48)	(4.62)	(2.58)	(4.76)	(3.90)	(4.20)

Standard deviations in parenthesis

Source: Latinobarometro

Table 2. Mean Parental Educational Attainment per Country per Year

	Year Research								
	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2013**
Argentina	9.85	9.43	9.14	10.47	10.28	10.31	10.29	10.57	10.09
	(3.69)	(3.79)	(4.01)	(3.65)	(3.70)	(3.73)	(3.63)	(3.44)	(3.35)
Bolivia	8.19	9.09	7.19	7.56	7.72	7.49	7.60	7.56	7.90
	(5.42)	(5.26)	(5.22)	(5.32)	(5.24)	(5.22)	(5.24)	(5.22)	(5.29)
Brazil	6.01	6.51	6.51	6.75	7.12	7.06	7.39	7.38	7.72
	(4.62)	(4.53)	(4.43)	(4.77)	(4.80)	(4.74)	(4.82)	(4.87)	(4.87)
Chile	11.04	11.02	10.33	10.13	10.73	10.38	10.97	11.42	10.94
	(3.69)	(3.60)	(3.93)	(4.02)	(3.86)	(3.97)	(3.45)	(3.31)	(3.41)
Colombia	9.13	8.51	9.08	8.71	8.75	7.56	10.98	11.22	9.99
	(4.83)	(4.78)	(4.66)	(4.68)	(5.00)	(4.83)	(4.51)	(4.37)	(4.40)
Costa Rica	7.37	7.00	7.71	7.93	7.65	7.85	7.62	7.64	7.93
	(4.31)	(4.48)	(4.35)	(4.34)	(4.28)	(4.32)	(4.23)	(4.40)	(4.45)
Dominican Rep.	7.37	7.46	7.76	7.32	8.01	7.87	7.81	7.58	7.77
	(5.07)	(4.90)	(4.82)	(4.79)	(5.16)	(4.91)	(4.93)	(5.40)	(5.17)
Ecuador	9.41	7.87	7.85	7.64	7.49	7.72	8.13	8.09	10.94
	(4.24)	(4.58)	(4.80)	(4.77)	(4.67)	(4.70)	(4.81)	(4.53)	(3.89)
El Salvador	6.03	5.93	5.91	6.37	6.19	6.04	6.22	6.07	6.20
	(4.97)	(4.96)	(4.99)	(4.99)	(5.01)	(4.86)	(5.08)	(4.86)	(4.81)
Guatemala	3.45	3.96	3.74	3.38	3.58	4.07	4.05	4.17	3.86
	(3.69)	(4.06)	(4.22)	(3.59)	(4.39)	(4.44)	(4.67)	(4.47)	(4.36)
Honduras	5.17	4.92	4.87	5.55	5.62	5.10	5.38	5.10	5.43
	(4.08)	(4.38)	(4.30)	(4.38)	(4.05)	(4.19)	(4.49)	(4.37)	(4.27)
Mexico	7.53	8.13	7.80	8.03	8.25	7.87	7.79	8.07	7.78
	(4.16)	(4.56)	(4.83)	(4.80)	(4.93)	(4.68)	(4.65)	(4.57)	(4.32)
Nicaragua	5.21	5.26	5.11	4.74	5.19	5.19	5.62	5.41	5.27
	(4.58)	(4.68)	(4.54)	(4.36)	(4.70)	(4.83)	(4.85)	(4.87)	(4.69)
Panama	8.54	8.46	8.60	8.22	7.31	7.99	8.03	8.53	9.79
	(4.65)	(4.65)	(4.85)	(4.47)	(4.75)	(4.82)	(4.80)	(4.78)	(4.77)
Paraguay	10.10	7.83	7.95	8.74	8.65	7.94	9.20	8.66	8.87
	(4.31)	(4.15)	(4.36)	(4.17)	(4.20)	(4.04)	(4.43)	(4.19)	(3.48)
Peru	11.35	8.53	9.06	9.11	8.75	9.69	9.68	9.62	9.39
	(4.24)	(4.97)	(5.00)	(5.12)	(5.08)	(4.98)	(4.98)	(5.09)	(4.98)
Uruguay	9.69	8.98	9.44	9.50	8.80	8.91	9.27	9.54	8.85
	(4.05)	(3.80)	(3.89)	(4.19)	(3.85)	(3.60)	(4.09)	(3.88)	(3.55)
Venezuela	8.90	8.96	8.73	9.12	10.31	10.01	10.16	11.07	9.97
	(4.26)	(3.95)	(4.36)	(4.33)	(4.11)	(3.65)	(4.21)	(3.71)	(3.64)

Standard deviations in parenthesis

Source: Latinobarometro

When comparing Table 1 and Table 2 for the entire period, we can see an increase of 3.13 years of education on average from one generation to the other. The countries that stand out the most are Venezuela, Colombia, and Bolivia with 4.26, 3.96, and 3.76 more average years of education, respectively between generations.

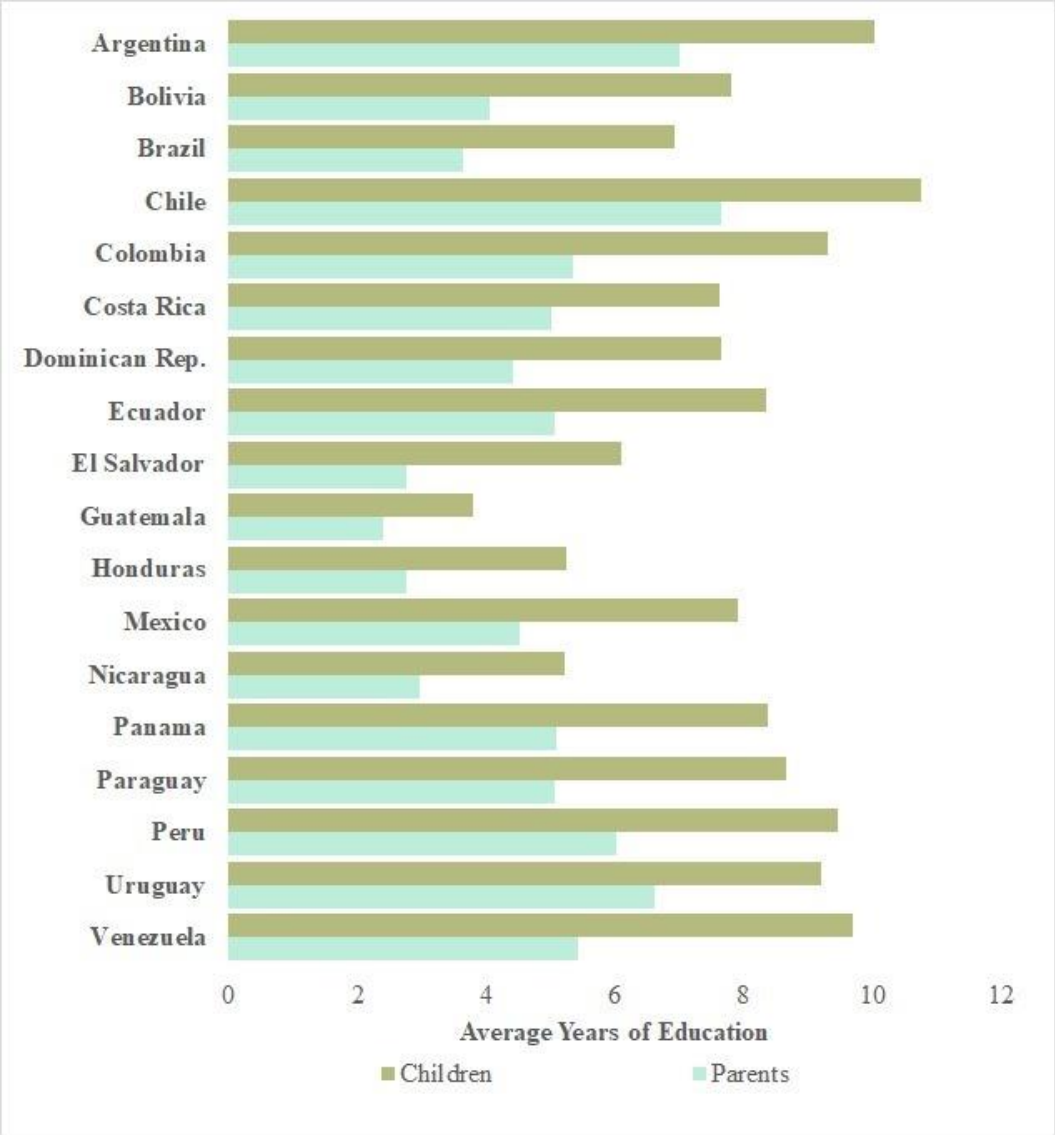

Figure 4. Average Years of Education for Children and Parents per Country
Source: Latinobarometro

Figure 5 shows the average change in the Educational Attainment distribution between generations by year. Through the box plots below, it can be seen that children have had higher levels of educational attainment than their parents over time.

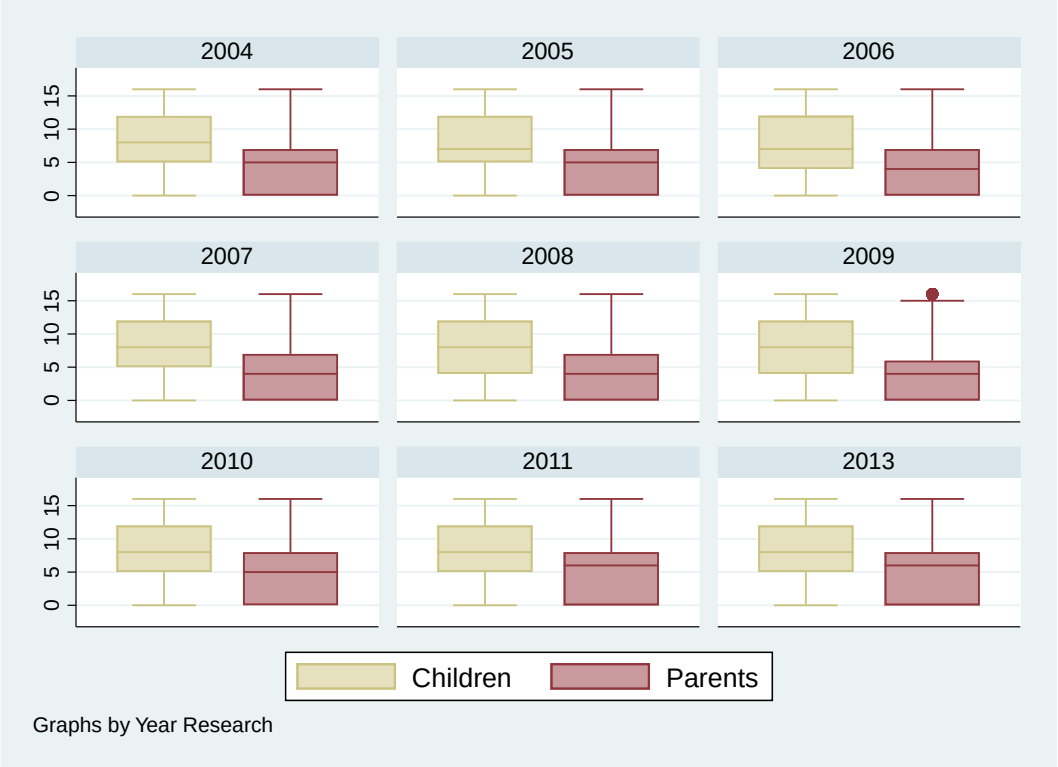

Figure 5. Educational Attainment Distributions for Children and Parents per Year
Source: Latinobarometro

METHODOLOGY

In this section describes the techniques used to measure educational intergenerational mobility in Latin America. Beta-coefficients were computed in different regression models, using both Ordinary Least Squares (OLS) and Quantile Regression (QR). The models can be distinguished by two main considerations: 1.) Linearity of the main regressor (parental education), and 2.) a set of variables used as a control in the model. At the same time, models with controls can be divided into two: with identity controls and with no identity controls. The reason for this distinction is that in 2006, Latinobarometro didn't include questions about identity. In order to keep this year in the period of analysis, I computed models with and without identity controls.

The linearity distinction emerged from the possibility of different effects on educational attainment, depending which part of the distribution of parental education (PE) was being analyzed. On the other hand, the inclusion of controls goes along with the extension of a traditional bivariate focus by considering a spectrum of dimensions of social beginnings, i.e. circumstances, such as gender or identity (Torche, 2014).

Ordinary Least Squares (OLS)

As noted, before the most common tool to measure intergenerational mobility is the beta-coefficient from a linear regression of children on parent's outcome. We regress the educational attainment (E) of child *i* from country *j* in year *k* on the years of education of the parent with the highest educational attainment (PE). The OLS model is the following:

$$E_{ijk} = \alpha + \beta_{jk} PE_{ijk} + \gamma_{jk} X_{ijk} + \varepsilon_{ijk}, \quad (1)$$

where α is a constant, X is the vector of control variables, and ε is the error term. The vector X includes self-reported parental income decile (PI), gender, identity and town size control. The beta-coefficient reflects how a child's final education is associated with parental educational attainment. A larger beta-coefficient implies less mobility given that there is more inequality in the levels of education across generations.

When non-linearity of parental education is considered, the estimation becomes:

$$E_{ijk} = \alpha + \beta_{jk} PE_{ijk} + \delta_{jk} PE_{ijk}^2 + \gamma_{jk} X_{ijk} + \varepsilon_{ijk}, \quad (2)$$

A cubic term for parental education and a quadratic one for parental income decile were also considered. But through a variance inflation factor analysis, they were dropped given multicollinearity.

Equations (1) and (2) were estimated per country and per year, and also for the full sample. Neidhofer et al. (2017); Daude (2011); Daude & Robano (2015) are recent studies that compute similar estimates for the region. The major contribution of this paper is the period of study, the inclusion, or validation, of a non-linear parental education term, and the quantile regression analysis, which we explain next.

Quantile Regression (QR)

The standard lineal regression for classical OLS estimation is a useful tool for summarizing the average relationship with the outcome variable of interest and a group of regressors, based on the function $E(y/x)$. Therefore, OLS provides only a small view of the relationship. A wider and fuller analysis would provide information about the relationship between the outcome y and the regressor x, at different points in the conditional distribution of y in the Quantile Regression (QR).

This methodology complements the classical OLS estimation, which is conditional on the mean, by estimating different beta-coefficients along the distribution of the dependent variable. In this way we can obtain different effects of PE on the median of educational attainment (E), on the10th percentile, on the 20th percentile, etc. Therefore, QR allows us to study the impact of regressors on the location and on the scale parameters of the model, giving us a more complete view of the data.

The QR analysis was proposed by Koenker & Basset (1978), and ever since has been widely used in economic research. As Navarro (2007) notes, this approach has many advantages. First, based on Buchinsky (1998), the "*quantile regression model assumes that covariates may not only shift the location or the scale of the conditional distribution, but also could affect the shape of the distribution as well*" (Navarro, 2007, p. 4). Second, given that QR is based on a weighted sum of absolute deviations, the estimated *betas* are not sensitive to outliers of the dependent variable. Thirdly, the OLS estimation is efficient and unbiased when the error term follows a normal distribution, but in the case of heteroskedacity a QR approach seems to be more accurate given that the error term will have less variation per quantile of the dependent variable. The current analyses found heteroskedacity using a Breusch-Pagan test, thus QR provides a more reliable estimation.

Quantiles and percentiles are synonymous – the 0.99 quantile is the 99th percentile. The median, defined as the middle value of a set of ranked data, is the best-know specific quantile(Cameron, A.C et al, 2010, p.205). The quantile q, $q \in (0,1)$, is defined as that value of$y$ that splits the data into the proportions q below and $1-q$ above. These concepts extend to the conditional quantile regression function, denoted as $Q_q(y/x)$, where the conditional quantile will be taken to be linear in $\boldsymbol{x}$.

Koenker & Basset(1978)show that estimating quantile is a good solution when one face the minimization problem. The weighted absolute sum of deviations is minimized in order to estimate θ_{th}:

$$q_\theta = argmin_c = E[p_\theta(Y - c)], \quad (3)$$

where$p_\theta$represents the weights, and$(1-\theta)$is assigned to the negative deviations, while $\theta$is assigned to the positive ones. $Y$is the dependent variable, and $c$is the center of thedistribution that minimizes the squared sum of deviations (Davino et al., 2014). In this sense, Equation (3) for a continuous variable becomes:

$$q_\theta = argmin_c \{(1-\theta)\int_{-\infty}^{c}|y-c|f(y)dy + \theta\int_{c}^{-\infty}|y-c|\,f(y)dy\}, \quad (4)$$

In the regression setting, $Y$is interpreted as a response variable, Xas a set of predictor variables, and the unconditional mean as a minimizer to be able to estimate the conditional mean function:

$$\hat{\mu}(x_i,\beta) = argmin_\mu E[Y - \mu\,(x_i,\beta)]^2, \quad (5)$$

Therefore, for the generic θ_{th}quantile:

$$\hat{q}_y(\theta,X) = argmin_{(\theta,X)}(\theta,X)\;E[\rho_\theta\,(Y - Q_y(\theta,X))], \quad (6)$$

where $Q_Y(\theta,X) = Q[(Y|X=x)]$represents the generic conditional quantile function. Similarly, the estimated beta for the $\theta_{th}$is givenby:

$$\beta(\theta) = argmin_\beta E[\rho_\theta\,(Y - X\beta)], \quad (7)$$

According to Koenker (2005), the quantile regression problem can be formulated as a linear programming method, and it is assumed to be solved by a finite number of simplex iterations. This way, the good performance of the quantile regression estimator drawn from a wide range of distributions that are not normally distributed is assured. As long as the residual sign is not altered, varying the magnitude of the response variable will not change the solutions (Navarro, 2007).

Applying quantile regression to Equations (1) and (2), we obtain the following estimation models:

$$E_{ik,\theta} = \alpha(\theta) + \beta_k(\theta)PE_{ik} + \gamma_k(\theta)X_{ik} + \varepsilon_{ik}(\theta), \qquad \theta[0,1] \qquad (8)$$

$$E_{ik,\theta} = \alpha(\theta) + \beta_k(\theta)PE_{ik} + \delta_k(\theta)PE_{ik}^2 + \gamma_k(\theta)X_{ik} + \varepsilon_{ik}(\theta), \qquad \theta[0,1] \qquad (9)$$

The subindex j is removed here because the quantile regression was estimated only for the entire region per year. In this sense, the set of $E_{ik,\theta}$ estimate the educational attainment distribution for Latin America in year.

EMPIRICAL RESULTS

The OLS and QR estimates to measure intergenerational mobility in Latin America are presented in this section. The results corroborate that parents education it is positively associated with their offspring's' education; however the main finding of this analysis is that there are but significant differences of this effect depending the family's position in the income distribution.

Table 3 presents the OLS estimate beta-coefficient of parent's education on the attainment education of children for Equation (2) per country through the period of 2004 -2013 (Appendix A). For all countries, except Venezuela in 2009 and Costa Rica, Guatemala and Paraguay in 2013, there is a statistically significant effect of parental educational attainment on the educational achievement of their children.

Table 3. Educational Attainment Distribution per Year and Country - OLS Model

	2004	2005	2006	2007	2008	2009	2010	2011	2013
Argentina	0.641***	0.491***	0.665***	0.682***	0.528***	0.569***	0.579***	0.581***	0.691***
Bolivia	0.835***	0.861***	0.981***	0.857***	0.843***	1.075***	0.966***	0.800***	1.094***
Brazil	0.914***	0.858***	0.837***	0.893***	1.148***	1.027***	1.015***	0.903***	1.122***
Chile	0.644***	0.659***	0.628***	0.756***	0.783***	0.628***	0.647***	0.553***	0.610***
Colombia	0.999***	0.716***	0.837***	0.915***	0.885***	0.816***	0.568***	0.438***	0.313***
Costa Rica	0.461***	0.398***	0.389***	0.416***	0.334***	0.319***	0.257***	0.618***	*0.06*
Dominican Republic	0.456***	0.573***	0.651***	0.741***	1.105***	0.891***	0.641***	0.938***	0.442***
Ecuador	0.747***	0.757***	0.868***	0.861***	0.802***	0.713***	0.831***	0.764***	0.610***
El Salvador	1.063***	1.131***	0.844***	1.363***	0.853***	0.990***	0.702***	1.089***	0.806***
Guatemala	0.523***	0.568***	0.452***	0.290***	0.998***	0.992***	0.848***	0.529***	*0.12*
Honduras	0.690***	0.605***	0.415***	0.537***	0.325***	0.832***	0.574***	0.761***	0.571***
Mexico	0.429***	0.304***	0.856***	0.711***	0.850***	0.753***	0.720***	0.616***	0.582***
Nicaragua	0.515***	0.616***	0.450***	0.583***	0.383***	0.664***	0.537***	0.801***	0.989***
Panama	0.874***	0.777***	0.784***	0.832***	0.820***	0.692***	1.035***	0.675***	0.466***
Paraguay	0.740***	0.730***	0.944***	0.734***	0.885***	0.806***	1.017***	0.706***	*-0.15*
Peru	0.686***	0.679***	0.706***	0.812***	0.661***	0.713***	0.858***	0.888***	0.697***
Uruguay	0.764***	0.678***	0.744***	0.679***	0.559***	0.542***	0.878***	0.641***	0.633***
Venezuela	0.483***	0.479***	0.838***	0.787***	0.531***	*-0.03*	0.498***	1.127***	0.475***

Source: Estimations from author based on Latinobarometro data

Ordinary Least Square Estimates

Although the OLS outputs of are important, these are insufficient to confirm that intergenerational mobility exists in Latin America. In that sense, we analyze the results of the QR estimation in the Figure 6.

According to the Gini coefficient from the World Bank Data, in the period of study Ecuador is one of the countries with the highest decrease of inequality, and the results here show that it has had one of the major mobility increases. Contrastingly, Brazil and Nicaragua show an opposite trend, reporting less mobility in 2013 than in 2007.

Regarding the control variables, we can see in Appendix A that parental income decile (PI) in general has a positive and significant effect on educational attainment. Being a man has a positive but not always significant effect. Similarly, the indigenous coefficient is not significant every time, but it is worth noting its significance and negative sign in Bolivia, one of the countries with the largest proportion of indigenous people. The size of the respondent's town has a positive but not always significant effect.

Overall, parental education followed by parental income, seem to be the more determinant factors of an individual's educational attainment.

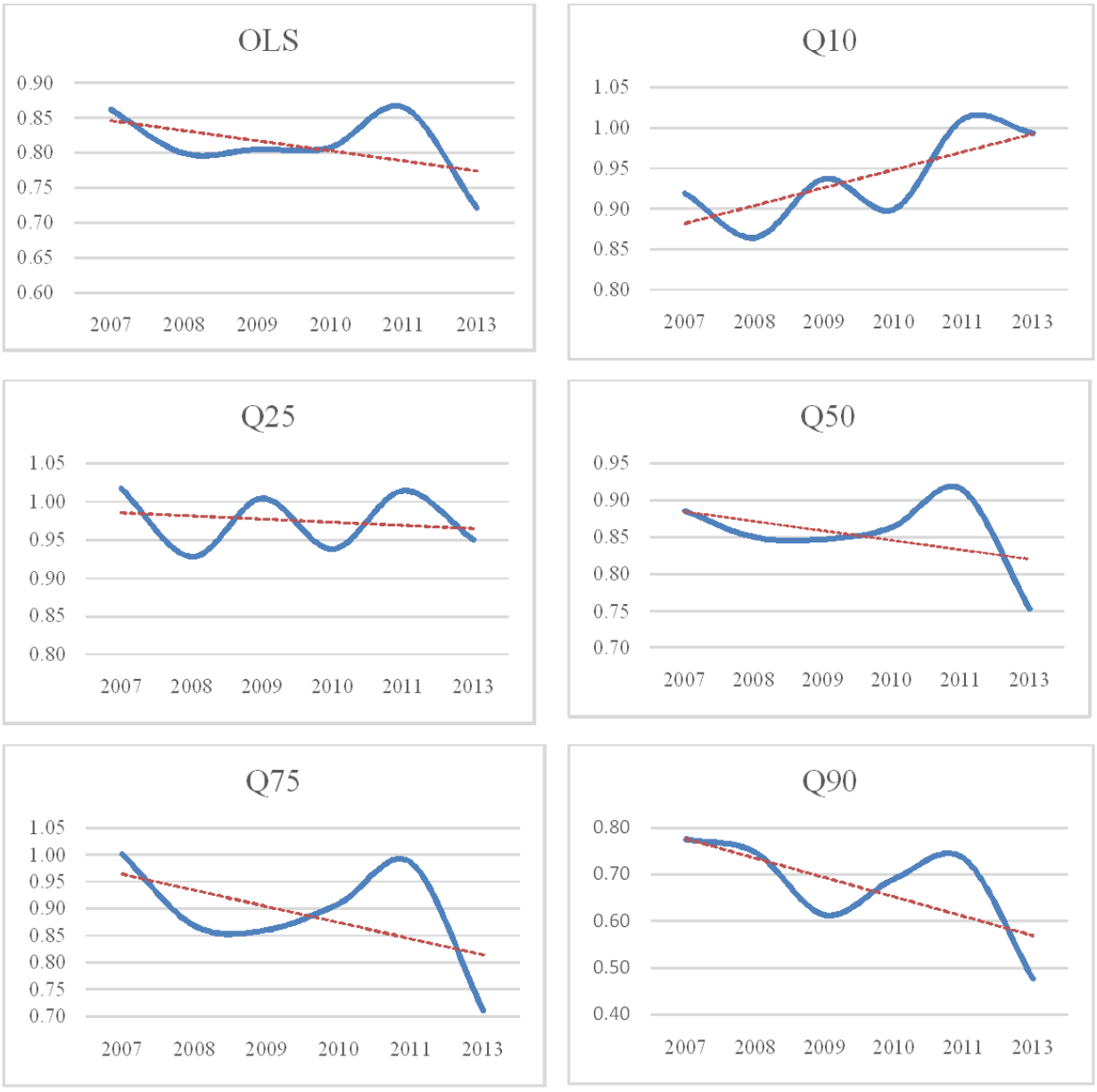

Figure 6. Parental Educational Attainment Coefficients per year- OLS and QR Model
Source: Estimations from author based on Latinobarometro data

Quantile Regression Estimates

In Appendix B we see the Parental Educational (PE) beta estimation per year for Equation (9). To summarize these results, I generated Figure 6 in order to report the significant differences of the PE coefficient between each quantile, and then compare them to the OLS estimation.

The Parental Education OLS coefficients from 2007 to 2011 fluctuate between 0.80 and 0.85, there is a significant change in 2013 as it decreases to 0.72. Therefore, we could conclude that there in 2013 Latin America had more intergenerational mobility. However, this needs to be analyzed through the distribution of the dependent variable.

In this context, Figure 6 shows the quantile regression coefficients for parental education (PE) for the 2007- 2013 period. An interesting finding is to observe that children in Q10 -lower educational attainment- have lower intergenerational mobility resulting from their parent's low educational attainment. Moreover, the downward path of intergenerational in the Q10 quantile accentuates each year. On the other hand, educational intergenerational mobility in quintiles Q25 and Q50 remains constant over time, except in 2013, when it improves. Finally, individuals in quintiles Q75 and Q90 experienced greater generation mobility, that is, parents who had higher levels of education had children with higher educational attainment.

In Figure 7 we can see the significant differences between OLS and Quantile Regression models. It is shocking that for every year and country, individuals in the lower income quantiles report an increasingly negative educational mobility, while those in the higher quantiles maintain a constant opposite trend.

In Appendix C, we show the difference between coefficients of different quantiles within the same year was also tested.

Table 4. Non-Linear Quantile Regression Estimates for Latin America, 2007 to 2013

	OLS	Q10	Q25	Q50	Q75	Q90
			TOTAL MODEL			
PE_year	0.812***	0.961***	0.983***	0.849***	0.902***	0.681***
	(0.008)	(0.014)	(0.013)	(0.014)	(0.011)	(0.014)
PEs	-0.020***	-0.025***	-0.020***	-0.018***	-0.027***	-0.025***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
PI	0.177***	0.032***	0.156***	0.213***	0.166***	0.107***
	(0.005)	(0.011)	(0.006)	(0.007)	(0.007)	(0.008)
male	0.201***	0.048***	0.139***	0.220***	0.166***	0.144***
	(0.026)	(0.018)	(0.034)	(0.038)	(0.033)	(0.035)
black	0.433***	-0.016	0.126*	0.515***	0.658***	0.529***
	(0.059)	(0.019)	(0.071)	(0.093)	(0.082)	(0.088)
indigena	-0.497***	-0.032*	-0.295***	-0.698***	-0.431***	-0.478***
	(0.061)	(0.018)	(0.052)	(0.098)	(0.080)	(0.144)
mestizo	0.761***	0.048**	0.486***	0.941***	0.893***	0.637***
	(0.047)	(0.023)	(0.056)	(0.072)	(0.066)	(0.079)
white	0.818***	0.242***	0.785***	0.895***	0.726***	0.475***
	(0.049)	(0.073)	(0.056)	(0.071)	(0.061)	(0.078)
tamciud	0.279***	0.048***	0.230***	0.316***	0.267***	0.195***
	(0.006)	(0.015)	(0.007)	(0.009)	(0.009)	(0.012)
Constant	2.194***	-0.420***	-1.003***	1.413***	4.639***	9.052***
	(0.057)	(0.130)	(0.051)	(0.091)	(0.073)	(0.123)

Source: Estimations from author based on Latinobarometro data

Even though parental education varies across quantiles, it consistently has a positive and significant effect on educational attainment. Most of the quantile regression estimates differ from the OLS one, except for the Q50 estimate that approaches the OLS coefficient over the different years.

On the other hand, the squared term of parental education (PEs) is not typically different from the mean estimation. These results suggest that, unlike the linear effect of parental education, the non-linear effect doesn't depend on the children educational attainment distribution.

Parental income decile (PI) always has a positive and significant effect on educational attainment. All the race variables are statistically significant too, showing the big impact of race on the individual's education. The exception in Q10 reveals that being black is not significant in the lower quantiles. Gender showed to be significant as well in every quantile. Being a man has a positive effect on educational achievement, but it varies within each quintile. The size of the

respondent's city has a positive and significant effect as observed in the model. The weight of the coefficient differs in Q10 when compared with the other quintiles.

Mobility has increased from 2007 to 2013 according to the OLS regression model. However, in the QR regression we can learn that less educated children from quantile 0.10 are not part of this phenomenon -recall Figure6-. In fact, mobility decreased for them over the period.

Figure 7 helps to analyze how the effect of parental education varies across quantiles. It presents the intercepts across quantiles, as well as the beta- coefficients for the linear and non-linear term for parental education, parental income, and other control variables.

The top right quadrant shows how mobility increases (beta decreases) as we move towards the top of the distribution of children's education. Moreover, if we only look at the linear term, it seems that those in Q25 are the ones with less educational mobility. At the same time, the graph shows the low variation of the squared parental education coefficient across quantiles. The bottom right corner suggests that parental income might have a higher effect at the median.

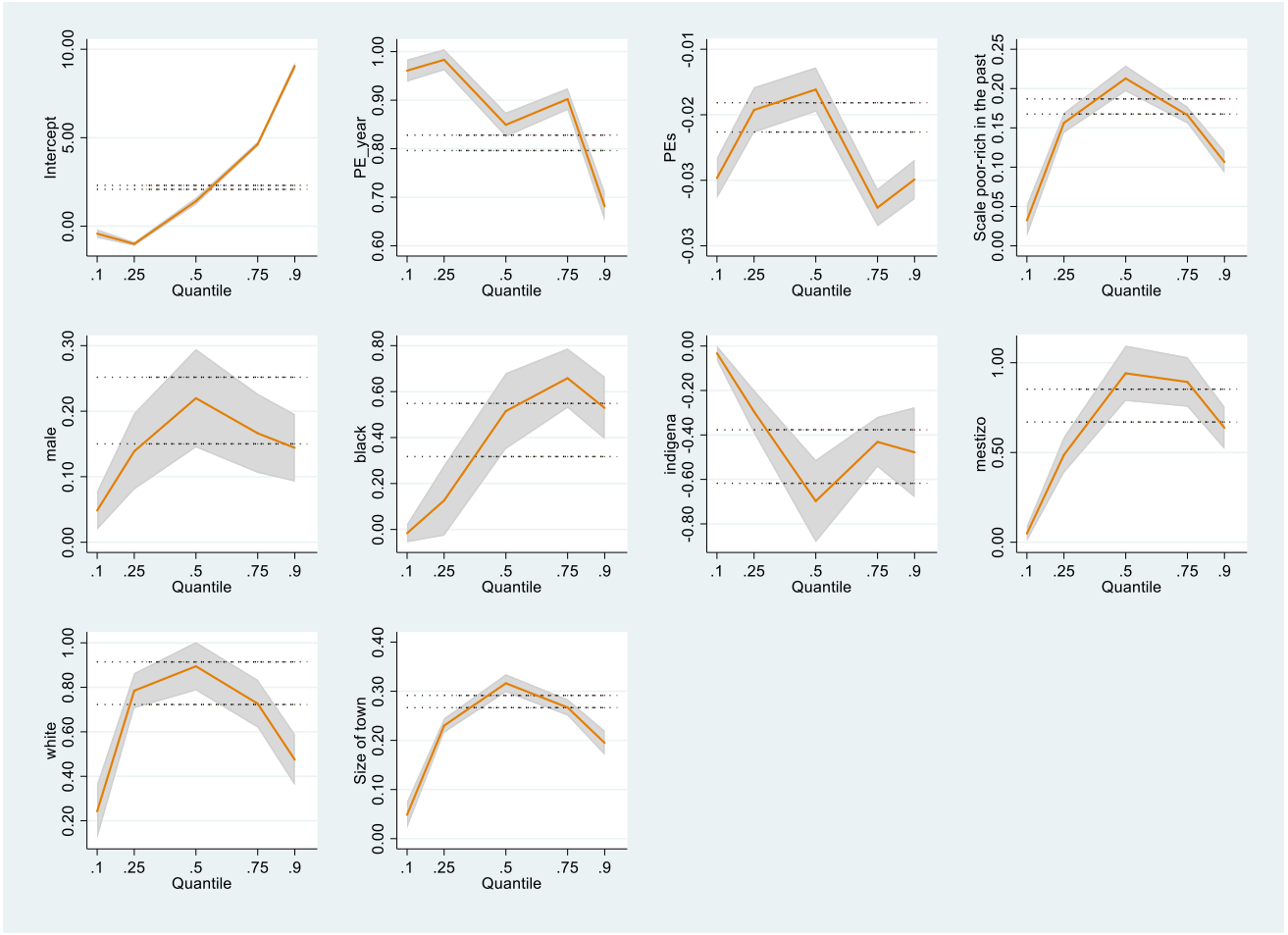

Figure 7: Non-Linear Quantile Regression Estimates for Latin America
Source: Estimations from author based on Latinobarometro data

APPENDIX A

Non-Linear OLS Estimations for Latin America by country

Argentina

	2004	2005	2006	2007	2008	2009	2010	2011	2013
PE_year	0.641***	0.491***	0.665***	0.682***	0.528***	0.569***	0.579***	0.581***	0.691***
	(0.0729)	(0.0733)	(0.0802)	(0.0757)	(0.0774)	(0.0763)	(0.0704)	(0.0701)	(0.0784)
PEs	-0.0115**	-0.00390	-0.0132**	-0.0156***	-0.00717	-0.00729	-0.00808*	-0.0103**	-0.0160***
	(0.00457)	(0.00504)	(0.00524)	(0.00462)	(0.00475)	(0.00472)	(0.00443)	(0.00434)	(0.00484)
PI	0.156***	0.399***	0.190***	0.114***	0.180***	0.127***	0.146***	0.0947***	0.0970***
	(0.0438)	(0.0616)	(0.0450)	(0.0438)	(0.0375)	(0.0389)	(0.0412)	(0.0341)	(0.0329)
male	-0.165	0.0216	-0.0466	-0.00493	-0.168	-0.0164	-0.353*	-0.346*	-0.494**
	(0.203)	(0.209)	(0.215)	(0.205)	(0.211)	(0.206)	(0.195)	(0.194)	(0.196)
black				-1.160	-1.313	-1.239	-1.443	2.084**	1.737
				(0.791)	(1.210)	(1.188)	(1.138)	(0.907)	(1.134)
indigena				1.356	-0.113	1.222	0.623	-0.554	-0.172
				(1.170)	(0.842)	(0.817)	(1.139)	(0.841)	(0.970)
mestizo				0.273	-0.0328	-0.119	-0.225	0.400	-0.0587
				(0.407)	(0.443)	(0.379)	(0.454)	(0.368)	(0.438)
white				0.507	0.481	0.617*	0.690*	0.509	0.00382
				(0.358)	(0.376)	(0.334)	(0.386)	(0.335)	(0.397)
tamciud	0.112***	0.151***	0.163***	0.267***	0.204***	0.255***	0.218***	0.0801	0.116
	(0.0432)	(0.0449)	(0.0479)	(0.0624)	(0.0578)	(0.0610)	(0.0549)	(0.0544)	(0.0717)
Constant	4.770***	4.045***	3.917***	3.950***	4.807***	4.261***	4.233***	5.894***	5.279***
	(0.377)	(0.403)	(0.391)	(0.570)	(0.520)	(0.539)	(0.555)	(0.505)	(0.662)

Bolivia

PE_year	0.835***	0.861***	0.981***	0.857***	0.843***	1.075***	0.966***	0.800***	1.094***
	(0.0941)	(0.0999)	(0.0836)	(0.0876)	(0.0951)	(0.0832)	(0.0864)	(0.101)	(0.100)
PEs	-0.0282***	-0.0302***	-0.0286***	-0.0219***	-0.0235***	-0.0388***	-0.0331***	-0.0268***	-0.0390***
	(0.00636)	(0.00667)	(0.00590)	(0.00589)	(0.00656)	(0.00590)	(0.00611)	(0.00703)	(0.00715)
PI	0.339***	0.718***	0.297***	0.131**	0.218***	0.0946	0.193***	0.261***	0.447***
	(0.0577)	(0.0939)	(0.0569)	(0.0594)	(0.0598)	(0.0755)	(0.0547)	(0.0520)	(0.0596)
male	2.066***	1.784***	1.110***	1.114***	0.966***	1.292***	1.103***	0.633**	1.142***
	(0.278)	(0.297)	(0.240)	(0.253)	(0.271)	(0.245)	(0.254)	(0.279)	(0.293)
black				0.488	-0.0661	1.281	1.593	2.678**	3.892***
				(1.874)	(1.248)	(1.459)	(1.363)	(1.196)	(1.414)
indigena				-0.487	0.286	0.660	0.00173	0.0284	1.108*
				(0.541)	(0.660)	(0.565)	(0.508)	(0.514)	(0.604)
mestizo				1.179**	1.896***	2.452***	1.889***	1.949***	1.858***
				(0.513)	(0.625)	(0.543)	(0.478)	(0.473)	(0.554)
white				1.908***	0.263	3.110***	1.629**	2.727***	0.846
				(0.732)	(0.890)	(0.769)	(0.772)	(0.867)	(1.297)
tamciud	0.440***	0.0758	0.533***	0.454***	0.540***	0.474***	0.612***	0.509***	0.00577
	(0.0523)	(0.0546)	(0.0641)	(0.0685)	(0.0744)	(0.0628)	(0.0653)	(0.0718)	(0.0708)
Constant	2.003***	2.779***	-0.244	0.703	-0.400	-0.796	-0.904	0.184	1.558**
	(0.327)	(0.417)	(0.417)	(0.621)	(0.775)	(0.656)	(0.568)	(0.622)	(0.696)

Continued next page

	2004	2005	2006	2007	2008	2009	2010	2011	2013
Brazil									
PE_year	0.914***	0.858***	0.837***	0.893***	1.148***	1.027***	1.015***	0.903***	1.122***
	(0.0889)	(0.0965)	(0.0877)	(0.0928)	(0.0893)	(0.0862)	(0.0860)	(0.0889)	(0.0912)
PEs	-0.0236***	-0.0275***	-0.0230***	-0.0231***	-0.0431***	-0.0368***	-0.0329***	-0.0255***	-0.0410***
	(0.00656)	(0.00750)	(0.00679)	(0.00675)	(0.00674)	(0.00632)	(0.00656)	(0.00671)	(0.00674)
PI	0.215***	0.358***	0.256***	0.119*	0.169***	0.217***	0.158***	0.185***	0.109**
	(0.0531)	(0.0695)	(0.0514)	(0.0610)	(0.0519)	(0.0579)	(0.0591)	(0.0520)	(0.0486)
male	-0.302	-0.441	-0.288	-0.337	-0.247	-0.387	-0.426*	-0.0261	-0.295
	(0.265)	(0.278)	(0.248)	(0.270)	(0.259)	(0.255)	(0.249)	(0.251)	(0.258)
black				-0.631	-0.190	-0.0445	0.260	-0.540	-0.527
				(0.613)	(0.777)	(0.604)	(0.596)	(0.776)	(0.582)
indigena				-1.018	0.442	-0.574	1.127	-1.878	-0.644
				(1.195)	(1.265)	(0.933)	(0.948)	(1.298)	(1.340)
mestizo				0.0968	-0.170	0.374	0.662	-0.272	-1.002*
				(0.659)	(0.794)	(0.609)	(0.634)	(0.798)	(0.599)
white				-0.0605	0.756	0.504	1.397**	1.203	-0.108
				(0.599)	(0.763)	(0.581)	(0.586)	(0.763)	(0.559)
tamciud	0.301***	0.151**	0.205***	0.304***	0.178***	0.292***	0.215***	0.305***	0.215***
	(0.0688)	(0.0698)	(0.0639)	(0.0804)	(0.0683)	(0.0638)	(0.0520)	(0.0667)	(0.0715)
Chile									
PE_year	0.644***	0.659***	0.628***	0.756***	0.783***	0.628***	0.647***	0.553***	0.610***
	(0.0715)	(0.0696)	(0.0718)	(0.0699)	(0.0708)	(0.0729)	(0.0623)	(0.0608)	(0.0639)
PEs	-0.0103**	-0.0148***	-0.0125***	-0.0179***	-0.0156***	-0.0110**	-0.0133***	-0.00425	-0.00925**
	(0.00450)	(0.00435)	(0.00472)	(0.00459)	(0.00446)	(0.00492)	(0.00407)	(0.00374)	(0.00425)
PI	0.108*	0.491***	0.233***	0.238***	0.193***	0.285***	0.195***	0.126***	0.198***
	(0.0551)	(0.0663)	(0.0618)	(0.0554)	(0.0497)	(0.0585)	(0.0459)	(0.0444)	(0.0460)
male	0.889***	0.336*	0.502**	0.431**	0.638***	0.260	0.297*	0.555***	0.209
	(0.197)	(0.186)	(0.212)	(0.209)	(0.195)	(0.210)	(0.174)	(0.163)	(0.179)
black				1.131	-2.253*	-0.801	1.767**	-2.344*	-1.412
				(0.950)	(1.212)	(1.612)	(0.863)	(1.417)	(1.042)
indigena				1.231**	0.289	-0.878	0.632	-0.655	-0.262
				(0.556)	(0.601)	(0.626)	(0.490)	(0.442)	(0.488)
mestizo				1.467***	0.234	-0.180	1.529***	-0.296	0.300
				(0.428)	(0.470)	(0.479)	(0.411)	(0.362)	(0.347)
white				1.179***	-0.174	-0.164	1.486***	-0.132	0.169
				(0.414)	(0.429)	(0.460)	(0.392)	(0.343)	(0.327)
tamciud	-0.103	0.154	0.170***	0.100**	0.00532	-0.0107	0.0381	0.0557	0.0517
	(0.140)	(0.140)	(0.0406)	(0.0413)	(0.0632)	(0.0581)	(0.0455)	(0.0387)	(0.0491)
Constant	6.659***	3.696***	4.691***	3.116***	4.915***	5.608***	4.479***	6.222***	5.645***
	(1.061)	(1.073)	(0.352)	(0.493)	(0.643)	(0.614)	(0.526)	(0.477)	(0.480)

Continued next page

	2004	2005	2006	2007	2008	2009	2010	2011	2013
Colombia									
PE_year	0.999***	0.716***	0.837***	0.915***	0.885***	0.816***	0.568***	0.438***	0.313***
	(0.0850)	(0.0917)	(0.0896)	(0.0840)	(0.0887)	(0.0909)	(0.0677)	(0.0705)	(0.0779)
PEs	-0.0334***	-0.0173***	-0.0252***	-0.0286***	-0.0310***	-0.0237***	-0.0135***	-0.00632	0.00417
	(0.00572)	(0.00602)	(0.00597)	(0.00570)	(0.00610)	(0.00636)	(0.00445)	(0.00428)	(0.00503)
PI	0.241***	0.562***	0.255***	0.256***	0.236***	0.135**	0.286***	0.371***	0.335***
	(0.0609)	(0.0750)	(0.0615)	(0.0537)	(0.0436)	(0.0667)	(0.0472)	(0.0430)	(0.0561)
male	0.534**	0.550**	0.540**	0.472*	0.101	-0.0978	0.662***	0.0486	-0.412
	(0.267)	(0.269)	(0.271)	(0.255)	(0.282)	(0.293)	(0.247)	(0.230)	(0.282)
black				1.301**	0.615	-0.116	-0.0206	0.478	0.798
				(0.600)	(0.515)	(0.630)	(0.594)	(0.491)	(0.705)
indigena				-1.167	0.145	-1.181	0.0397	0.564	0.722
				(0.723)	(0.710)	(0.825)	(0.664)	(0.601)	(0.836)
mestizo				1.183**	1.102***	-0.0990	0.389	1.265***	1.626***
				(0.513)	(0.424)	(0.536)	(0.484)	(0.392)	(0.584)
white				0.571	0.603	-0.258	-0.0840	0.700*	0.864
				(0.528)	(0.456)	(0.549)	(0.499)	(0.419)	(0.620)
tamciud	0.114*	0.159**	0.0379	0.140**	0.452***	0.146**	0.266***	0.307***	0.318***
	(0.0652)	(0.0632)	(0.0644)	(0.0575)	(0.0732)	(0.0580)	(0.0548)	(0.0511)	(0.0641)
Constant	3.859***	2.433***	4.635***	2.751***	1.953***	4.080***	5.486***	4.567***	3.718***
	(0.474)	(0.495)	(0.485)	(0.596)	(0.542)	(0.607)	(0.550)	(0.486)	(0.661)
Costa Rica									
PE_year	0.461***	0.398***	0.389***	0.416***	0.334***	0.319***	0.257***	0.618***	0.0622
	(0.0828)	(0.0861)	(0.0901)	(0.0952)	(0.0937)	(0.0878)	(0.0851)	(0.0855)	(0.0948)
PEs	-0.000353	0.00113	0.000552	-0.00531	0.00250	0.00188	0.00972*	-0.00781	0.0216***
	(0.00568)	(0.00599)	(0.00603)	(0.00648)	(0.00751)	(0.00590)	(0.00579)	(0.00585)	(0.00628)
PI	0.298***	0.462***	0.182***	0.248***	0.123**	0.181***	0.151***	0.126***	0.0368
	(0.0566)	(0.0644)	(0.0524)	(0.0555)	(0.0482)	(0.0545)	(0.0493)	(0.0469)	(0.0527)
male	0.407	0.175	-0.122	0.0589	0.653**	0.614**	0.408	-0.00198	0.191
	(0.272)	(0.283)	(0.295)	(0.318)	(0.314)	(0.301)	(0.293)	(0.284)	(0.325)
black				0.258	-0.0590	0.808	-0.224	-0.244	-1.300*
				(0.660)	(0.668)	(0.796)	(0.763)	(0.751)	(0.776)
indigena				-0.446	-1.962*	1.041	0.119	1.435	-1.092
				(0.885)	(1.131)	(0.994)	(1.318)	(0.917)	(1.180)
mestizo				0.452	0.463	1.331*	-0.528	0.0737	-0.266
				(0.592)	(0.553)	(0.718)	(0.751)	(0.710)	(0.716)
white				-0.0658	0.316	1.222*	0.118	0.489	-0.121
				(0.546)	(0.533)	(0.707)	(0.715)	(0.698)	(0.697)
tamciud	0.0998	0.0151	0.261**	0.0993	0.113	0.0782	0.118	-0.0967	-0.0410
	(0.0711)	(0.0801)	(0.118)	(0.124)	(0.108)	(0.104)	(0.0942)	(0.107)	(0.131)
Constant	3.549***	3.178***	4.273***	4.460***	4.435***	3.516***	4.339***	4.606***	6.848***
	(0.383)	(0.413)	(0.443)	(0.693)	(0.772)	(0.921)	(0.867)	(0.954)	(1.044)

Continued next page

	2004	2005	2006	2007	2008	2009	2010	2011	2013
Dominican Republic									
PE_year	0.456***	0.573***	0.651***	0.741***	1.105***	0.891***	0.641***	0.938***	0.442***
	(0.113)	(0.0991)	(0.120)	(0.104)	(0.110)	(0.107)	(0.110)	(0.106)	(0.108)
PEs	-0.00841	-0.0155**	-0.0144	-0.0242***	-0.0368***	-0.0300***	-0.0179**	-0.0275***	0.00239
	(0.00794)	(0.00735)	(0.00887)	(0.00777)	(0.00841)	(0.00777)	(0.00805)	(0.00754)	(0.00751)
PI	0.289***	0.603***	0.147*	0.204***	0.256***	0.148*	0.345***	0.238***	0.238***
	(0.0704)	(0.0743)	(0.0789)	(0.0587)	(0.0728)	(0.0770)	(0.0747)	(0.0572)	(0.0666)
male	0.145	0.227	0.273	-0.613*	-0.130	0.259	-0.773**	-0.319	-0.338
	(0.367)	(0.327)	(0.355)	(0.336)	(0.340)	(0.354)	(0.352)	(0.343)	(0.352)
black				0.195	2.221*	-0.813	0.148	0.0742	2.656**
				(0.935)	(1.196)	(1.085)	(0.968)	(0.819)	(1.098)
indigena				-0.261	1.483	1.079	-0.116	-0.987	2.634**
				(1.099)	(1.438)	(1.272)	(1.479)	(1.138)	(1.337)
mestizo				0.418	2.547**	-0.640	-0.449	0.350	2.657**
				(0.949)	(1.218)	(1.112)	(0.996)	(0.846)	(1.097)
white				-0.0654	2.418*	-2.223*	1.090	-1.089	1.595
				(1.020)	(1.259)	(1.213)	(1.119)	(0.939)	(1.184)
tamciud	0.0870	0.0253	0.368***	0.477***	0.109	0.146	0.141	0.383***	0.223*
	(0.0982)	(0.0824)	(0.0871)	(0.0810)	(0.0904)	(0.0978)	(0.0979)	(0.110)	(0.114)
Constant	4.086***	3.630***	2.295***	1.771*	0.674	4.421***	4.456***	1.846*	1.311
	(0.677)	(0.585)	(0.612)	(1.036)	(1.310)	(1.215)	(1.137)	(1.021)	(1.232)
Ecuador									
PE_year	0.747***	0.757***	0.868***	0.861***	0.802***	0.713***	0.831***	0.764***	0.610***
	(0.0788)	(0.0790)	(0.0754)	(0.0754)	(0.0751)	(0.0786)	(0.0791)	(0.0788)	(0.0823)
PEs	-0.0167***	-0.0203***	-0.0216***	-0.0181***	-0.0158***	-0.0105*	-0.0140**	-0.0116**	-0.0134**
	(0.00555)	(0.00574)	(0.00557)	(0.00563)	(0.00544)	(0.00608)	(0.00573)	(0.00580)	(0.00522)
PI	0.162***	0.547***	0.305***	0.195***	0.234***	0.312***	0.150***	0.147**	0.254***
	(0.0582)	(0.0814)	(0.0673)	(0.0585)	(0.0486)	(0.0610)	(0.0542)	(0.0575)	(0.0421)
male	0.609**	0.0626	-0.0729	0.191	0.0835	-0.168	-0.0772	0.451*	0.585**
	(0.241)	(0.258)	(0.238)	(0.236)	(0.227)	(0.243)	(0.244)	(0.243)	(0.227)
black				-1.967*	1.136**	1.837**	1.180	0.908	0.0473
				(1.044)	(0.573)	(0.770)	(1.158)	(0.924)	(1.072)
indigena				-3.864***	0.964	0.587	0.0479	0.835	-0.102
				(1.053)	(0.599)	(0.750)	(1.184)	(0.919)	(1.195)
mestizo				-2.086**	1.628***	1.964***	0.447	1.421*	0.466
				(0.963)	(0.435)	(0.603)	(1.067)	(0.798)	(1.006)
white				-1.665	1.317**	1.848**	1.207	1.523	-0.0565
				(1.133)	(0.564)	(0.777)	(1.185)	(1.014)	(1.135)
tamciud	0.0889*	0.154***	0.411***	0.534***	0.333***	0.354***	0.356***	0.336***	0.171
	(0.0469)	(0.0495)	(0.0783)	(0.0735)	(0.0767)	(0.0769)	(0.0834)	(0.0797)	(0.122)
Constant	4.743***	2.493***	1.255**	2.469**	0.105	0.0141	1.365	0.386	4.856***
	(0.362)	(0.389)	(0.488)	(1.063)	(0.600)	(0.759)	(1.140)	(0.981)	(1.337)

Continued next page

	2004	2005	2006	2007	2008	2009	2010	2011	2013
El Salvador									
PE_year	1.063***	1.131***	0.844***	1.363***	0.853***	0.990***	0.702***	1.089***	0.806***
	(0.0935)	(0.0995)	(0.111)	(0.0790)	(0.118)	(0.132)	(0.122)	(0.0998)	(0.103)
PEs	-0.0283***	-0.0505***	-0.0287***	-0.0505***	-0.0346***	-0.0423***	-0.0191**	-0.0443***	-0.0203**
	(0.00704)	(0.00709)	(0.00806)	(0.00604)	(0.00980)	(0.0111)	(0.00951)	(0.00796)	(0.00826)
PI	0.150***	0.314***	0.502***	0.186***	0.0552	0.288***	0.242***	0.134**	0.195***
	(0.0541)	(0.0804)	(0.0735)	(0.0495)	(0.0459)	(0.0576)	(0.0669)	(0.0553)	(0.0682)
male	0.414	0.607**	0.221	0.472**	0.573*	1.273***	0.555	0.564*	0.628**
	(0.274)	(0.299)	(0.300)	(0.240)	(0.296)	(0.303)	(0.337)	(0.297)	(0.304)
black				2.334***	0.668	-1.182	1.280	0.750	-1.519**
				(0.648)	(0.589)	(0.917)	(0.827)	(0.738)	(0.733)
indigena				1.962**	0.591	-1.550**	-0.595	0.109	0.865
				(0.916)	(0.673)	(0.768)	(0.848)	(0.792)	(0.946)
mestizo				1.583***	0.646	-0.569	1.814***	0.729	0.716
				(0.313)	(0.408)	(0.417)	(0.579)	(0.502)	(0.599)
white				2.587***	0.944	-0.620	0.218	1.090	0.777
				(0.579)	(0.580)	(0.603)	(0.781)	(0.666)	(0.555)
tamciud	0.331***	0.251***	0.327***	0.138***	0.692***	0.181**	0.367***	0.399***	0.274***
	(0.0525)	(0.0592)	(0.0643)	(0.0510)	(0.0662)	(0.0803)	(0.0935)	(0.0754)	(0.0836)
Constant	2.164***	1.440***	1.891***	0.664*	1.636***	3.128***	0.426	0.662	1.254*
	(0.292)	(0.340)	(0.328)	(0.387)	(0.476)	(0.545)	(0.683)	(0.643)	(0.690)
Guatamela									
PE_year	0.523***	0.568***	0.452***	0.290***	0.998***	0.992***	0.848***	0.529***	0.121
	(0.0796)	(0.0773)	(0.0824)	(0.104)	(0.101)	(0.100)	(0.110)	(0.112)	(0.0949)
PEs	-0.00359	0.00743	0.00157	0.0146	-0.0220**	-0.0297***	-0.0236**	-0.00674	0.0343***
	(0.00703)	(0.00569)	(0.00592)	(0.00966)	(0.00861)	(0.00886)	(0.00947)	(0.0104)	(0.00760)
PI	0.166***	0.150***	0.151**	0.197***	0.238***	0.182***	0.306***	0.361***	0.185***
	(0.0477)	(0.0552)	(0.0637)	(0.0576)	(0.0464)	(0.0546)	(0.0530)	(0.0523)	(0.0545)
male	0.981***	0.350	0.405	0.128	0.0661	0.787***	0.730**	0.896***	1.168***
	(0.217)	(0.232)	(0.287)	(0.267)	(0.256)	(0.257)	(0.296)	(0.282)	(0.285)
black				-1.081	1.053	-0.183	-2.070*	0.313	0.303
				(0.966)	(0.989)	(0.891)	(1.191)	(1.170)	(1.302)
indigena				-0.275	-0.594	-0.880	-1.145	0.338	1.301**
				(0.430)	(0.476)	(0.550)	(0.820)	(0.531)	(0.531)
mestizo				0.633	-0.0474	0.810	0.427	2.396***	1.870***
				(0.462)	(0.493)	(0.565)	(0.824)	(0.597)	(0.573)
white				0.205	-0.702	0.347	0.186	1.897***	1.690***
				(0.609)	(0.558)	(0.626)	(0.849)	(0.553)	(0.538)
tamciud	0.453***	0.0433	0.206**	-0.0283	-0.120	0.301***	-0.149	0.489***	0.0583
	(0.0675)	(0.0679)	(0.0832)	(0.0776)	(0.0791)	(0.0874)	(0.0986)	(0.0955)	(0.0884)
Constant	-1.107***	1.447***	0.0682	1.799***	2.356***	0.121	2.583***	-1.513**	0.118
	(0.380)	(0.412)	(0.552)	(0.592)	(0.591)	(0.735)	(0.930)	(0.682)	(0.632)

Continued next page

	2004	2005	2006	2007	2008	2009	2010	2011	2013
Honduras									
PE_year	0.690***	0.605***	0.415***	0.537***	0.325***	0.832***	0.574***	0.761***	0.571***
	(0.0870)	(0.0898)	(0.101)	(0.0918)	(0.106)	(0.0927)	(0.0970)	(0.0843)	(0.0847)
PEs	-0.00611	-0.00841	-0.00246	-0.00561	-0.00279	-0.0258***	0.00545	-0.0135**	-0.00799
	(0.00810)	(0.00674)	(0.00778)	(0.00814)	(0.00966)	(0.00780)	(0.00760)	(0.00679)	(0.00636)
PI	0.126***	0.383***	0.234***	0.0127	0.0905**	0.155***	0.00463	0.144***	0.133**
	(0.0473)	(0.0624)	(0.0628)	(0.0500)	(0.0453)	(0.0477)	(0.0576)	(0.0469)	(0.0517)
male	0.299	0.432	-0.386	-0.260	0.0678	-0.0575	0.525*	-0.0746	-0.489*
	(0.234)	(0.270)	(0.301)	(0.264)	(0.267)	(0.263)	(0.292)	(0.258)	(0.261)
black				-0.326	0.843	0.860	-0.465	0.783	1.337
				(0.629)	(0.775)	(0.737)	(0.730)	(0.657)	(0.839)
indigena				-0.826	0.341	0.855	0.301	1.341**	0.622
				(0.507)	(0.637)	(0.556)	(0.601)	(0.585)	(0.582)
mestizo				-0.121	1.264**	1.713***	0.598	0.915*	1.965***
				(0.393)	(0.570)	(0.386)	(0.427)	(0.486)	(0.470)
white				-0.629	0.995	1.953***	-0.00472	1.100*	0.951
				(0.527)	(0.633)	(0.478)	(0.565)	(0.633)	(0.582)
tamciud	0.378***	0.389***	0.616***	0.785***	0.680***	0.240***	0.178**	0.468***	0.538***
	(0.0563)	(0.0653)	(0.0836)	(0.0626)	(0.0719)	(0.0773)	(0.0776)	(0.0741)	(0.0804)
Constant	1.051***	0.0387	0.237	0.522	0.180	0.550	1.859***	-0.972	-0.921
	(0.325)	(0.418)	(0.497)	(0.482)	(0.635)	(0.501)	(0.571)	(0.637)	(0.633)
Mexico									
PE_year	0.429***	0.304***	0.856***	0.711***	0.850***	0.753***	0.720***	0.616***	0.582***
	(0.0842)	(0.0890)	(0.0772)	(0.0747)	(0.0742)	(0.0773)	(0.0751)	(0.0736)	(0.0759)
PEs	-0.0146**	-0.00583	-0.0264***	-0.0165***	-0.0228***	-0.0175***	-0.0176***	-0.0136**	-0.0126**
	(0.00577)	(0.00588)	(0.00547)	(0.00522)	(0.00506)	(0.00550)	(0.00526)	(0.00539)	(0.00543)
PI	0.0405	0.0889	0.286***	0.238***	0.165***	0.190***	0.287***	0.252***	0.230***
	(0.0721)	(0.0817)	(0.0580)	(0.0527)	(0.0397)	(0.0503)	(0.0497)	(0.0395)	(0.0436)
male	0.456	1.260***	0.708***	0.429*	0.387	0.356	0.288	0.941***	0.627**
	(0.286)	(0.311)	(0.247)	(0.242)	(0.239)	(0.246)	(0.242)	(0.239)	(0.244)
black				-0.236	-0.271	0.0886	0.324	0.0833	1.847**
				(0.805)	(0.768)	(0.933)	(1.062)	(0.895)	(0.740)
indigena				-3.88e-05	0.317	0.389	0.122	0.144	0.805*
				(0.391)	(0.458)	(0.417)	(0.416)	(0.380)	(0.415)
mestizo				1.391***	1.296***	0.529*	0.749**	1.359***	1.183***
				(0.328)	(0.281)	(0.301)	(0.314)	(0.314)	(0.337)
white				0.190	0.346	0.144	0.386	0.455	-0.107
				(0.497)	(0.452)	(0.629)	(0.541)	(0.577)	(0.497)
tamciud	0.0923	0.0511	0.255***	0.241***	0.353***	0.172**	0.157*	0.405***	0.0852
	(0.0609)	(0.0679)	(0.0503)	(0.0672)	(0.0655)	(0.0696)	(0.0840)	(0.105)	(0.0679)
Constant	4.812***	5.403***	2.720***	2.428***	1.895***	3.166***	2.914***	1.334*	3.607***
	(0.538)	(0.592)	(0.319)	(0.476)	(0.468)	(0.525)	(0.640)	(0.774)	(0.494)

Continued next page

	2004	2005	2006	2007	2008	2009	2010	2011	2013
Nicaragua									
PE_year	0.515***	0.616***	0.450***	0.583***	0.383***	0.664***	0.537***	0.801***	0.989***
	(0.0970)	(0.104)	(0.119)	(0.0943)	(0.0874)	(0.103)	(0.0969)	(0.106)	(0.110)
PEs	0.000155	-0.00756	-0.0112	-0.0127*	0.00602	-0.0192**	-0.00822	-0.0257***	-0.0349***
	(0.00750)	(0.00759)	(0.00869)	(0.00689)	(0.00642)	(0.00766)	(0.00699)	(0.00766)	(0.00871)
PI	0.197***	0.504***	0.319***	0.108*	0.234***	0.244***	0.254***	0.247***	0.229***
	(0.0591)	(0.0894)	(0.0840)	(0.0570)	(0.0508)	(0.0707)	(0.0586)	(0.0608)	(0.0635)
male	0.300	0.0897	0.497	0.271	-0.185	-0.0169	-0.264	-0.761**	-0.435
	(0.308)	(0.319)	(0.354)	(0.302)	(0.281)	(0.333)	(0.314)	(0.329)	(0.312)
black				0.560	-0.216	1.025	1.338*	1.837**	-0.536
				(0.679)	(0.684)	(0.778)	(0.746)	(0.826)	(1.177)
indigena				-0.650	-0.0871	-0.496	1.037	0.900	1.864*
				(0.643)	(0.756)	(0.852)	(0.792)	(0.726)	(1.132)
mestizo				0.423	0.972**	1.176**	2.153***	1.320***	-0.0402
				(0.430)	(0.467)	(0.539)	(0.536)	(0.484)	(0.885)
white				0.0190	0.182	0.906	0.844	1.563	-0.293
				(0.621)	(0.653)	(0.784)	(0.744)	(0.951)	(1.018)
tamciud	0.189**	-0.0376	-0.0776	0.458***	0.748***	0.133	0.632***	0.483***	0.382***
	(0.0880)	(0.0833)	(0.102)	(0.0871)	(0.0838)	(0.0897)	(0.102)	(0.101)	(0.100)
Constant	1.796***	2.814***	3.510***	0.0591	-1.330**	1.346*	-1.433**	-0.199	0.972
	(0.538)	(0.528)	(0.653)	(0.606)	(0.626)	(0.739)	(0.716)	(0.673)	(1.013)
Panama									
PE_year	0.874***	0.777***	0.784***	0.832***	0.820***	0.692***	1.035***	0.675***	0.466***
	(0.0875)	(0.0885)	(0.0975)	(0.0889)	(0.0841)	(0.104)	(0.0885)	(0.108)	(0.0977)
PEs	-0.0201***	-0.0239***	-0.0223***	-0.0225***	-0.0275***	-0.0183**	-0.0358***	-0.0214***	-0.00610
	(0.00664)	(0.00640)	(0.00688)	(0.00655)	(0.00641)	(0.00756)	(0.00627)	(0.00717)	(0.00631)
PI	0.378***	0.319***	0.376***	0.115*	0.183***	0.216***	0.139***	0.0259	0.127**
	(0.0732)	(0.0712)	(0.0833)	(0.0595)	(0.0428)	(0.0538)	(0.0493)	(0.0520)	(0.0610)
male	-0.700**	-0.723**	-0.424	-0.332	-0.00682	-0.399	0.434	-0.233	-0.363
	(0.278)	(0.280)	(0.307)	(0.283)	(0.260)	(0.315)	(0.282)	(0.350)	(0.315)
black				0.0855	-0.153	0.107	0.628	0.503	-0.188
				(0.579)	(0.719)	(0.761)	(0.627)	(0.766)	(0.759)
indigena				-1.147	-3.742***	-1.755*	1.823**	-1.850**	-4.585***
				(0.873)	(0.865)	(0.966)	(0.787)	(0.876)	(0.837)
mestizo				0.350	-0.785	-0.124	0.990**	0.227	0.0694
				(0.481)	(0.666)	(0.676)	(0.498)	(0.664)	(0.704)
white				0.601	0.909	0.494	0.621	0.0186	-0.525
				(0.589)	(0.720)	(0.748)	(0.569)	(0.759)	(0.762)
tamciud	0.235***	0.210***	0.155***	0.197**	0.558***	0.320***	0.494***	0.0648	0.142*
	(0.0490)	(0.0557)	(0.0588)	(0.0831)	(0.0864)	(0.0964)	(0.0877)	(0.104)	(0.0735)
Constant	3.418***	4.073***	3.939***	3.905***	2.133**	3.260***	-0.214	5.299***	6.712***
	(0.403)	(0.361)	(0.401)	(0.545)	(0.830)	(0.833)	(0.684)	(0.868)	(0.756)

Continued next page

	2004	2005	2006	2007	2008	2009	2010	2011	2013
Paraguay									
PE_year	0.740***	0.730***	0.944***	0.734***	0.885***	0.806***	1.017***	0.706***	-0.152
	(0.146)	(0.0931)	(0.0868)	(0.0845)	(0.0914)	(0.0826)	(0.0943)	(0.0756)	(0.111)
PEs	-0.0194**	-0.0150**	-0.0241***	-0.0154***	-0.0253***	-0.0172***	-0.0329***	-0.0167***	0.0334***
	(0.00876)	(0.00643)	(0.00642)	(0.00569)	(0.00614)	(0.00595)	(0.00598)	(0.00539)	(0.0122)
PI	0.135	0.335***	0.0889	0.0491	0.101*	0.102**	0.0898*	0.231***	0.267***
	(0.0960)	(0.0778)	(0.0567)	(0.0521)	(0.0513)	(0.0484)	(0.0498)	(0.0408)	(0.0513)
male	0.668*	0.249	1.065***	0.527**	0.443*	0.494**	0.272	0.285	0.273
	(0.390)	(0.259)	(0.240)	(0.245)	(0.244)	(0.213)	(0.239)	(0.226)	(0.243)
black				0.300	-0.741	0.248	0.476	1.540	0.850
				(1.008)	(0.978)	(0.692)	(0.970)	(1.098)	(1.163)
indigena				-0.103	-0.580	0.948	0.266	0.765	-0.552
				(1.111)	(0.706)	(0.999)	(0.841)	(0.818)	(1.773)
mestizo				0.772**	0.763**	0.822***	1.463***	0.844**	1.251**
				(0.319)	(0.322)	(0.288)	(0.357)	(0.390)	(0.598)
white				0.744**	0.908***	0.648**	0.900**	1.364***	1.172*
				(0.298)	(0.292)	(0.288)	(0.362)	(0.409)	(0.613)
tamciud	1.068***	0.0714	0.153***	0.300***	0.240***	0.231***	0.460***	0.336***	0.202***
	(0.267)	(0.0531)	(0.0504)	(0.0489)	(0.0496)	(0.0444)	(0.0560)	(0.0500)	(0.0499)
Constant	-2.262	3.253***	2.885***	3.271***	2.757***	2.594***	1.394***	2.817***	5.201***
	(1.974)	(0.443)	(0.376)	(0.437)	(0.421)	(0.383)	(0.501)	(0.438)	(0.678)
Peru									
PE_year	0.686***	0.679***	0.706***	0.812***	0.661***	0.713***	0.858***	0.888***	0.697***
	(0.0820)	(0.0804)	(0.0794)	(0.0849)	(0.0837)	(0.0815)	(0.0770)	(0.0802)	(0.0898)
PEs	-0.0205***	-0.0162***	-0.0154***	-0.0249***	-0.0136**	-0.0180***	-0.0254***	-0.0262***	-0.0150**
	(0.00513)	(0.00526)	(0.00526)	(0.00550)	(0.00545)	(0.00514)	(0.00515)	(0.00501)	(0.00581)
PI	0.110**	0.584***	0.173***	0.213***	0.181***	0.256***	0.275***	0.256***	0.360***
	(0.0512)	(0.0791)	(0.0575)	(0.0545)	(0.0543)	(0.0646)	(0.0495)	(0.0490)	(0.0638)
male	0.809***	1.628***	0.845***	0.795***	1.411***	0.626**	1.077***	0.954***	0.992***
	(0.250)	(0.265)	(0.252)	(0.264)	(0.262)	(0.256)	(0.240)	(0.238)	(0.276)
black				0.955	1.329*	-0.222	0.112	-1.307	0.761
				(0.817)	(0.710)	(0.808)	(0.820)	(0.892)	(1.059)
indigena				1.580**	1.346**	1.654***	0.730	-0.375	-0.255
				(0.644)	(0.589)	(0.580)	(0.644)	(0.587)	(0.696)
mestizo				1.589***	1.500***	1.382***	0.963*	0.829*	0.305
				(0.506)	(0.435)	(0.425)	(0.518)	(0.437)	(0.465)
white				0.828	1.007	1.001	0.250	0.415	-0.0455
				(0.677)	(0.672)	(0.657)	(0.703)	(0.620)	(0.642)
tamciud	0.163***	0.278***	0.594***	0.547***	0.479***	0.535***	0.483***	0.498***	0.143**
	(0.0424)	(0.0454)	(0.0733)	(0.0780)	(0.0754)	(0.0645)	(0.0611)	(0.0600)	(0.0684)
Constant	6.491***	1.654***	1.319***	-0.157	0.350	0.834	0.958	0.845	3.200***
	(0.384)	(0.370)	(0.483)	(0.612)	(0.584)	(0.574)	(0.632)	(0.547)	(0.580)

Continued next page

	2004	2005	2006	2007	2008	2009	2010	2011	2013
Uruguay									
PE_year	0.764***	0.678***	0.744***	0.679***	0.559***	0.542***	0.878***	0.641***	0.633***
	(0.0833)	(0.0767)	(0.0894)	(0.0764)	(0.0938)	(0.0798)	(0.0849)	(0.0846)	(0.0833)
PEs	-0.0187***	-0.0152***	-0.0184***	-0.0128***	0.000275	-0.00304	-0.0229***	-0.0124**	-0.0100**
	(0.00501)	(0.00461)	(0.00530)	(0.00465)	(0.00576)	(0.00496)	(0.00526)	(0.00502)	(0.00501)
PI	0.195***	0.334***	0.136***	0.150***	0.0471	0.0997***	0.0332	0.0779**	0.174***
	(0.0506)	(0.0609)	(0.0472)	(0.0430)	(0.0378)	(0.0379)	(0.0337)	(0.0357)	(0.0363)
male	0.0935	0.00719	-0.502**	-0.163	-0.192	-0.423**	-0.154	0.0190	-0.242
	(0.226)	(0.214)	(0.222)	(0.216)	(0.223)	(0.200)	(0.221)	(0.219)	(0.193)
black				0.278	-0.647	0.503	-0.553	-0.911*	-2.153***
				(0.572)	(0.774)	(0.614)	(0.601)	(0.540)	(0.644)
indigena				0.844	1.426	2.213	-2.030*	-1.254	-0.977
				(0.873)	(1.303)	(1.507)	(1.058)	(1.153)	(0.756)
mestizo				0.347	1.512**	0.428	-0.0787	0.0617	-1.119**
				(0.565)	(0.718)	(0.510)	(0.531)	(0.548)	(0.559)
white				0.351	0.563	1.406***	0.559	0.457	-0.616
				(0.346)	(0.480)	(0.330)	(0.372)	(0.341)	(0.504)
tamciud	0.105**	0.144***	0.194***	0.201***	0.120***	0.0858**	0.109***	0.135***	0.113***
	(0.0429)	(0.0386)	(0.0408)	(0.0400)	(0.0426)	(0.0394)	(0.0403)	(0.0429)	(0.0361)
Constant	4.254***	3.487***	4.219***	3.837***	3.988***	3.760***	3.885***	4.667***	4.715***
	(0.416)	(0.378)	(0.394)	(0.500)	(0.600)	(0.455)	(0.515)	(0.492)	(0.619)
Venezuela									
PE_year	0.483***	0.479***	0.838***	0.787***	0.531***	-0.0257	0.498***	1.127***	0.475***
	(0.0741)	(0.0694)	(0.0759)	(0.0726)	(0.0701)	(0.116)	(0.0782)	(0.118)	(0.0704)
PEs	-0.00749	-0.00415	-0.0253***	-0.0229***	-0.00705	0.00440	-0.00659	-0.0430***	-0.00549
	(0.00541)	(0.00524)	(0.00570)	(0.00542)	(0.00444)	(0.0148)	(0.00542)	(0.00699)	(0.00500)
PI	0.233***	0.215***	0.195***	0.0954*	0.118***	-0.0256	0.112**	0.120***	0.168***
	(0.0536)	(0.0620)	(0.0555)	(0.0561)	(0.0405)	(0.0498)	(0.0453)	(0.0451)	(0.0434)
male	-0.00604	0.0648	0.202	-0.0852	-0.236	-0.110	-0.234	-0.0644	-0.540**
	(0.252)	(0.229)	(0.241)	(0.242)	(0.228)	(0.272)	(0.271)	(0.276)	(0.218)
black				-0.918**	0.515	-0.478	0.120	-0.307	0.532
				(0.452)	(0.462)	(0.587)	(0.622)	(1.143)	(0.922)
indigena				-1.095*	0.448	-2.044***	1.311	-0.0650	0.190
				(0.623)	(0.817)	(0.724)	(0.980)	(1.382)	(1.046)
mestizo				0.301	0.744*	-0.463	0.525	0.106	0.784
				(0.424)	(0.398)	(0.574)	(0.613)	(1.140)	(0.937)
white				0.0138	1.206***	-1.091*	0.654	0.250	0.921
				(0.424)	(0.411)	(0.581)	(0.625)	(1.136)	(0.926)
tamciud	0.174**	0.108*	-0.0764	0.151*	0.505***	-0.0667	0.0671	-0.0199	0.0124
	(0.0736)	(0.0626)	(0.0594)	(0.0790)	(0.115)	(0.0653)	(0.0637)	(0.0739)	(0.0803)
Constant	5.037***	5.516***	5.064***	5.039***	2.598***	11.27***	6.640***	5.307***	6.160***
	(0.476)	(0.403)	(0.403)	(0.658)	(0.849)	(0.710)	(0.702)	(1.267)	(1.078)

APPENDIX B

Non-Linear Quantile Regression Estimates for Latin American by year

	OLS	Q10	Q25	Q50	Q75	Q90
			2007			
PE_year	0.862***	0.919***	1.017***	0.885***	1.001***	0.775***
	(0.019)	(0.036)	(0.027)	(0.029)	(0.025)	(0.030)
PEs	-0.023***	-0.022***	-0.024***	-0.021***	-0.032***	-0.029***
	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)	(0.002)
PI	0.160***	0.039***	0.119***	0.188***	0.142***	0.113***
	(0.013)	(0.015)	(0.018)	(0.019)	(0.017)	(0.024)
male	0.180***	0.013	0.000	0.125	0.153*	0.069
	(0.062)	(0.024)	(0.075)	(0.096)	(0.078)	(0.087)
black	0.260*	-0.064	0.168	0.188	0.119	0.416
	(0.138)	(0.056)	(0.151)	(0.205)	(0.188)	(0.266)
indigena	-0.767***	-0.077	-0.495***	-1.000***	-0.861***	-0.692**
	(0.139)	(0.050)	(0.107)	(0.188)	(0.183)	(0.318)
mestizo	0.743***	0.064	0.478***	0.938***	0.652***	0.557***
	(0.105)	(0.043)	(0.115)	(0.156)	(0.145)	(0.185)
white	0.807***	0.401**	0.777***	0.875***	0.563***	0.444**
	(0.112)	(0.163)	(0.131)	(0.155)	(0.143)	(0.184)
tamciud	0.283***	0.064**	0.245***	0.313***	0.283***	0.197***
	(0.014)	(0.026)	(0.019)	(0.021)	(0.022)	(0.027)
Constant	2.097***	-0.515***	-0.842***	1.562***	4.433***	8.653***
	(0.129)	(0.197)	(0.094)	(0.185)	(0.169)	(0.292)
			2008			
PE_year	0.799***	0.864***	0.928***	0.850***	0.868***	0.747***
	(0.020)	(0.031)	(0.026)	(0.030)	(0.033)	(0.029)
PEs	-0.019***	-0.015***	-0.016***	-0.018***	-0.026***	-0.029***
	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)
PI	0.170***	0.057***	0.142***	0.215***	0.157***	0.093***
	(0.011)	(0.015)	(0.013)	(0.016)	(0.017)	(0.016)
male	0.218***	0.075*	0.150**	0.198**	0.171**	0.253***
	(0.063)	(0.039)	(0.066)	(0.092)	(0.087)	(0.074)
black	0.227*	-0.024	0.146	0.226	0.397*	0.226
	(0.138)	(0.070)	(0.144)	(0.238)	(0.214)	(0.187)
indigena	-0.581***	-0.009	-0.281**	-0.779***	-0.532**	-0.725**
	(0.144)	(0.065)	(0.115)	(0.230)	(0.249)	(0.295)
mestizo	0.641***	0.166**	0.573***	0.684***	0.828***	0.533***
	(0.105)	(0.066)	(0.104)	(0.152)	(0.166)	(0.166)
white	0.697***	0.460***	0.854***	0.728***	0.718***	0.439***
	(0.111)	(0.122)	(0.115)	(0.149)	(0.170)	(0.165)
tamciud	0.355***	0.096***	0.285***	0.431***	0.360***	0.363***
	(0.016)	(0.026)	(0.019)	(0.023)	(0.026)	(0.026)
Constant	1.914***	-0.798***	-1.142***	0.888***	4.327***	7.928***
	(0.131)	(0.203)	(0.114)	(0.183)	(0.211)	(0.248)

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	OLS	Q10	Q25	Q50	Q75	Q90
			2009			
PE_year	0.805***	0.937***	1.004***	0.847***	0.860***	0.613***
	(0.020)	(0.047)	(0.030)	(0.030)	(0.027)	(0.027)
PEs	-0.021***	-0.023***	-0.023***	-0.018***	-0.025***	-0.022***
	(0.001)	(0.004)	(0.002)	(0.002)	(0.001)	(0.002)
PI	0.167***	0.000	0.162***	0.205***	0.164***	0.113***
	(0.013)	(0.010)	(0.015)	(0.020)	(0.023)	(0.021)
male	0.201***	-0.000	0.136*	0.212**	0.175**	0.131*
	(0.064)	(0.013)	(0.074)	(0.089)	(0.085)	(0.078)
black	0.664***	-0.000	0.026	0.972***	1.075***	0.925***
	(0.145)	(0.021)	(0.140)	(0.230)	(0.198)	(0.282)
indigena	-0.581***	-0.000	-0.460***	-0.622***	-0.296*	-0.434
	(0.147)	(0.018)	(0.123)	(0.232)	(0.177)	(0.393)
mestizo	0.686***	-0.000	0.383***	0.810***	0.813***	0.757***
	(0.111)	(0.019)	(0.115)	(0.155)	(0.141)	(0.244)
white	0.774***	0.000	0.677***	0.870***	0.714***	0.644***
	(0.117)	(0.080)	(0.125)	(0.157)	(0.146)	(0.247)
tamciud	0.242***	0.000	0.187***	0.287***	0.252***	0.187***
	(0.016)	(0.010)	(0.023)	(0.024)	(0.023)	(0.029)
Constant	2.474***	0.000	-0.750***	1.582***	4.780***	9.131***
	(0.140)	(0.096)	(0.119)	(0.220)	(0.191)	(0.326)
			2010			
PE_year	0.808***	0.899***	0.938***	0.863***	0.909***	0.690***
	(0.020)	(0.041)	(0.030)	(0.027)	(0.026)	(0.033)
PEs	-0.020***	-0.019***	-0.016***	-0.019***	-0.028***	-0.026***
	(0.001)	(0.004)	(0.002)	(0.002)	(0.001)	(0.002)
PI	0.176***	0.068***	0.174***	0.214***	0.160***	0.088***
	(0.012)	(0.022)	(0.018)	(0.017)	(0.019)	(0.017)
male	0.237***	0.117**	0.208***	0.327***	0.182**	0.137*
	(0.064)	(0.058)	(0.069)	(0.084)	(0.079)	(0.074)
black	0.723***	0.013	0.438***	1.185***	0.857***	0.450**
	(0.148)	(0.110)	(0.161)	(0.196)	(0.182)	(0.201)
indigena	-0.304*	-0.005	-0.243**	-0.446*	-0.105	-0.013
	(0.159)	(0.074)	(0.114)	(0.250)	(0.209)	(0.245)
mestizo	0.920***	0.114	0.486***	1.355***	1.039***	0.666***
	(0.121)	(0.082)	(0.127)	(0.161)	(0.167)	(0.185)
white	1.064***	0.535***	0.937***	1.398***	0.868***	0.513***
	(0.126)	(0.176)	(0.148)	(0.170)	(0.168)	(0.187)
tamciud	0.283***	0.101***	0.243***	0.315***	0.246***	0.144***
	(0.016)	(0.031)	(0.021)	(0.022)	(0.021)	(0.025)
Constant	2.064***	-0.907***	-1.111***	1.059***	4.778***	9.516***
	(0.150)	(0.279)	(0.120)	(0.229)	(0.179)	(0.281)

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	OLS	Q10	Q25	Q50	Q75	Q90
			2011			
PE_year	0.865***	1.011***	1.014***	0.915***	0.985***	0.734***
	(0.020)	(0.029)	(0.029)	(0.029)	(0.028)	(0.032)
Pes	-0.023***	-0.029***	-0.021***	-0.021***	-0.032***	-0.028***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
PI	0.182***	0.061***	0.154***	0.215***	0.162***	0.093***
	(0.011)	(0.014)	(0.016)	(0.017)	(0.017)	(0.017)
male	0.226***	0.100**	0.163**	0.332***	0.163**	0.093
	(0.063)	(0.043)	(0.067)	(0.089)	(0.078)	(0.066)
black	0.193	0.022	0.016	-0.125	0.305	0.404**
	(0.147)	(0.064)	(0.130)	(0.223)	(0.230)	(0.180)
indigena	-0.432***	-0.061	-0.190*	-0.688***	-0.468**	-0.411
	(0.150)	(0.072)	(0.115)	(0.216)	(0.186)	(0.367)
mestizo	0.748***	0.078	0.477***	0.872***	0.870***	0.589***
	(0.117)	(0.062)	(0.122)	(0.163)	(0.174)	(0.143)
white	1.067***	0.500***	1.161***	1.106***	0.837***	0.480***
	(0.123)	(0.125)	(0.159)	(0.167)	(0.172)	(0.148)
tamciud	0.272***	0.106***	0.222***	0.303***	0.234***	0.181***
	(0.016)	(0.024)	(0.019)	(0.022)	(0.021)	(0.021)
Constant	2.080***	-0.878***	-1.060***	1.309***	4.668***	9.188***
	(0.145)	(0.194)	(0.128)	(0.210)	(0.204)	(0.251)
			2013			
PE_year	0.721***	0.993***	0.950***	0.753***	0.711***	0.477***
	(0.020)	(0.030)	(0.028)	(0.031)	(0.025)	(0.026)
PEs	-0.015***	-0.027***	-0.017***	-0.013***	-0.017***	-0.012***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
PI	0.224***	0.047*	0.185***	0.250***	0.231***	0.136***
	(0.012)	(0.025)	(0.016)	(0.021)	(0.019)	(0.025)
male	0.148**	0.095**	0.139	0.202**	0.116	0.095
	(0.065)	(0.048)	(0.086)	(0.097)	(0.082)	(0.075)
black	0.482***	0.011	-0.116	0.476*	0.684***	0.653***
	(0.161)	(0.092)	(0.181)	(0.245)	(0.238)	(0.219)
indigena	-0.262	0.047	-0.139	-0.274	-0.382	0.147
	(0.171)	(0.089)	(0.162)	(0.262)	(0.273)	(0.307)
mestizo	0.818***	0.142	0.555***	0.976***	0.924***	0.728***
	(0.135)	(0.111)	(0.160)	(0.187)	(0.200)	(0.196)
white	0.475***	0.189	0.485***	0.378**	0.347*	0.380*
	(0.139)	(0.122)	(0.152)	(0.185)	(0.206)	(0.201)
tamciud	0.230***	0.047*	0.208***	0.262***	0.192***	0.147***
	(0.017)	(0.025)	(0.021)	(0.026)	(0.026)	(0.021)
Constant	2.623***	-0.521*	-0.878***	1.976***	5.499***	9.592***
	(0.162)	(0.277)	(0.143)	(0.246)	(0.269)	(0.304)

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	OLS	Q10	Q25	Q50	Q75	Q90
TOTAL MODEL						
PE_year	0.812***	0.961***	0.983***	0.849***	0.902***	0.681***
	(0.008)	(0.014)	(0.013)	(0.014)	(0.011)	(0.014)
PEs	-0.020***	-0.025***	-0.020***	-0.018***	-0.027***	-0.025***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
PI	0.177***	0.032***	0.156***	0.213***	0.166***	0.107***
	(0.005)	(0.011)	(0.006)	(0.007)	(0.007)	(0.008)
male	0.201***	0.048***	0.139***	0.220***	0.166***	0.144***
	(0.026)	(0.018)	(0.034)	(0.038)	(0.033)	(0.035)
black	0.433***	-0.016	0.126*	0.515***	0.658***	0.529***
	(0.059)	(0.019)	(0.071)	(0.093)	(0.082)	(0.088)
indigena	-0.497***	-0.032*	-0.295***	-0.698***	-0.431***	-0.478***
	(0.061)	(0.018)	(0.052)	(0.098)	(0.080)	(0.144)
mestizo	0.761***	0.048**	0.486***	0.941***	0.893***	0.637***
	(0.047)	(0.023)	(0.056)	(0.072)	(0.066)	(0.079)
white	0.818***	0.242***	0.785***	0.895***	0.726***	0.475***
	(0.049)	(0.073)	(0.056)	(0.071)	(0.061)	(0.078)
tamciud	0.279***	0.048***	0.230***	0.316***	0.267***	0.195***
	(0.006)	(0.015)	(0.007)	(0.009)	(0.009)	(0.012)
Constant	2.194***	-0.420***	-1.003***	1.413***	4.639***	9.052***
	(0.057)	(0.130)	(0.051)	(0.091)	(0.073)	(0.123)

APPENDIX C

Difference Between Coefficients of Different Quantiles Within Same Year

```
. test [q10=q25=q50=q75=q90]: PE_year

 ( 1)  [q10]PE_year - [q25]PE_year = 0
 ( 2)  [q10]PE_year - [q50]PE_year = 0
 ( 3)  [q10]PE_year - [q75]PE_year = 0
 ( 4)  [q10]PE_year - [q90]PE_year = 0

       F(  4, 83925) =  116.00
            Prob > F =    0.0000

. test [q10=q25=q50=q75=q90]: PEs

 ( 1)  [q10]PEs - [q25]PEs = 0
 ( 2)  [q10]PEs - [q50]PEs = 0
 ( 3)  [q10]PEs - [q75]PEs = 0
 ( 4)  [q10]PEs - [q90]PEs = 0

       F(  4, 83925) =   42.86
            Prob > F =    0.0000

. test [q10=q25=q50=q75=q90]: PI

 ( 1)  [q10]PI - [q25]PI = 0
 ( 2)  [q10]PI - [q50]PI = 0
 ( 3)  [q10]PI - [q75]PI = 0
 ( 4)  [q10]PI - [q90]PI = 0

       F(  4, 83925) =   80.24
            Prob > F =    0.0000

. test [q10=q25=q50=q75=q90]: male

 ( 1)  [q10]male - [q25]male = 0
 ( 2)  [q10]male - [q50]male = 0
 ( 3)  [q10]male - [q75]male = 0
 ( 4)  [q10]male - [q90]male = 0

       F(  4, 83925) =    5.07
            Prob > F =    0.0004
```

```
. test [q10=q25=q50=q75=q90]: indigena

 ( 1)  [q10]indigena - [q25]indigena = 0
 ( 2)  [q10]indigena - [q50]indigena = 0
 ( 3)  [q10]indigena - [q75]indigena = 0
 ( 4)  [q10]indigena - [q90]indigena = 0

       F(  4, 83925) =   14.84
            Prob > F =    0.0000

. test [q10=q25=q50=q75=q90]: mestizo

 ( 1)  [q10]mestizo - [q25]mestizo = 0
 ( 2)  [q10]mestizo - [q50]mestizo = 0
 ( 3)  [q10]mestizo - [q75]mestizo = 0
 ( 4)  [q10]mestizo - [q90]mestizo = 0

       F(  4, 83925) =   55.78
            Prob > F =    0.0000

. test [q10=q25=q50=q75=q90]: black

 ( 1)  [q10]black - [q25]black = 0
 ( 2)  [q10]black - [q50]black = 0
 ( 3)  [q10]black - [q75]black = 0
 ( 4)  [q10]black - [q90]black = 0

       F(  4, 83925) =   19.07
            Prob > F =    0.0000

. test [q10=q25=q50=q75=q90]: white

 ( 1)  [q10]white - [q25]white = 0
 ( 2)  [q10]white - [q50]white = 0
 ( 3)  [q10]white - [q75]white = 0
 ( 4)  [q10]white - [q90]white = 0

       F(  4, 83925) =   19.67
            Prob > F =    0.0000

. test [q10=q25=q50=q75=q90]: tamciud

 ( 1)  [q10]tamciud - [q25]tamciud = 0
 ( 2)  [q10]tamciud - [q50]tamciud = 0
 ( 3)  [q10]tamciud - [q75]tamciud = 0
 ( 4)  [q10]tamciud - [q90]tamciud = 0

       F(  4, 83925) =   92.96
            Prob > F =    0.0000
```

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