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by:

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Social Mobility in Bolivia is Finally Improving!*

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La Paz, December 2009

Abstract:

This paper evaluates the degree of social mobility in Bolivia, both by comparing to other Latin American countries, and by comparing social mobility at different points in time. While Bolivia had one of the lowest levels of social mobility in the region in 1997, the last 10 years have seen spectacular improvements, especially for rural and female teenagers. This is very good news, as it suggests that Bolivia has finally escaped the low mobility – low growth equilibrium where it has been stuck for so long.

JEL classification: E60, I32, J12, J13.

Keywords: Social Mobility, Bolivia.

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1. INTRODUCTION

The Lorenz curve and its corresponding Gini coefficient is often used to describe how unequal a country's income distribution is, and a high Gini coefficient is almost universally considered a sign of an unfair, and thus undesirable, outcome.

However, the Lorenz curve is a very incomplete measure of the fairness of the income distribution, because it says nothing about how each person have arrived at their present location in the distribution nor about how long they are likely to stay there. A society where people move around in the income distribution during the course of their lives depending on their current activities (studying, working, raising children, travelling around the world, unemployed, retired, etc) is very different from a society where some people are born at the bottom of the distribution and they stay there all their life, and their children and grand children are also likely to stay there because they have few opportunities for changing their circumstances.

Similarly, a country where half the population is poor all the time is very different from a country where the whole population is poor half the time, although in both cases the poverty rate would be 50%. In the latter situation, people can engage in consumption smoothing over time by running up savings in good times and running them down in bad times, and governments can engage in redistribution by transferring funds from people who are currently doing well to people who are currently not earning much. These options are not available in countries where it is the same people who are poor all the time, since the poor are always too poor to save and the rich will fight against a tax-system where they always have to pay and never will receive.

In order to really understand how unfair an income distribution is, it is necessary to understand the dynamics behind it. It is necessary to understand whether people have arrived at their current position in the distribution due to their own efforts--or lack thereof--or due to circumstances entirely beyond their own control (Roemer, 1998). That is, it is necessary to know about the degree of social mobility.

Social mobility and income inequality together describe the "fairness" of an income distribution. If income is very unevenly distributed and social mobility is low, then there is a large gap between rich and poor and there is little chance of crossing that gap. This is clearly an "unfair" situation. However, an unequal income distribution becomes much less worrisome if social mobility is high, because then it is relatively easy for poor families to improve their situation over time and over generations.

While income inequality measures such as the GINI coefficient are used widely and frequently to characterize income distributions, the degree of mobility across the income distribution, which is potentially more important, is only rarely considered. The problem is that social mobility is very difficult to measure empirically since it requires repeated information on the same people at different points in time. Only a few countries have the kind of data that allow them to calculate transition matrices directly.

Fortunately, some methods have been developed lately that allow the estimation of social mobility from standard household surveys. One such method is employed in this paper, both in order to compare Bolivia with other Latin American countries, and to test whether social mobility in Bolivia has been improving with the considerable efforts made to make development in Bolivia more inclusive and provide previously excluded sectors of society with more opportunities.

The remainder of the paper is organized as follows. Section 2 reviews the theoretical literature on social mobility. It shows that economies with high social mobility tend to experience higher growth rates than economies with low social mobility. Section 3 provides empirical estimates of social mobility in Bolivia and other Latin American countries by the end of the previous century. It is shown that ten years ago Bolivia was clearly among the countries with the lowest level of social mobility in Latin America. Section 4 discusses the implications of such low social mobility. Section 5 applies the same method of estimating social mobility on Bolivian household surveys from 1997 and 2007 in order to test whether there has been an improvement in social mobility over the last decade. Section 6 concludes.

2. SOCIAL MOBILITY IN THEORY

Several papers have theoretically analyzed the relationship between social mobility and economic growth, and they all arrive at the conclusion that high social mobility is associated with higher economic growth. However, the direction of causality and the transmission mechanisms between mobility and growth differ between models.

Raut (1996), for example, develops a signalling model of endogenous growth in which innate talents and education levels of workers drive the basic scientific knowledge accumulation in the economy. The innate talent of a worker is private knowledge and is distributed independently of the individual's family background. The education level of workers acts as a signalling device for talents and it improves productivity as well. The optimal education for each worker is determined by his talent and his family background. Whether talented individuals are properly educated and are employed in the appropriate technical sectors is determined by the perfectly competitive and unprejudiced employers' beliefs about the relationship between talent and education level.

The model generates multiple balanced growth paths, which differ in the degree of social mobility and the growth rate. If employers believe that education levels are determined primarily by family background and thus are a poor signal of innate talents, they will offer less attractive wage contracts, because their expected gain from the contract is lower than in the situation where education levels are perfect signals for innate talents. The lower wages induce young people to choose less education, which implies a less than optimal growth rate.

The optimal equilibrium is called a growth-enhancing separating equilibrium. In this situation all children get appropriately educated no matter what their family background, and the employer can trust that any person with a certain education also has the right innate

talents to go with it. In this situation all the innate talent in the economy is used optimally and growth is maximized.

To move an economy from a low social mobility–low growth equilibrium to a high mobility–high growth equilibrium will require a change in the employers’ self-fulfilling expectations about the importance of family background compared to the importance of innate talents. This can be done through government policy targeted at making the optimal education available for all children independent of their family background. This, in turn, requires a wide range of policy initiatives, ranging from pre-natal care to college loans.

Another theoretical study by Hassler & Mora (1998) analyzes an economy with two types of individuals: workers and entrepreneurs. Entrepreneurs are the ones that generate new ideas and new technologies and make the economy grow. The more intelligent the entrepreneurs the higher the growth rate of the economy. Intelligence is randomly distributed among all people. With low social mobility the current generation of entrepreneurs mainly consists of the children of the previous generation of entrepreneurs. From an intellectual point of view, they are a random sample of society’s entire population, and consequently, they have average levels of intelligence. The entrepreneurs are therefore not particularly innovative, and they do not change the world substantially. The entrepreneurs do, however, confront economic challenges, and they learn from these and pass this knowledge on to their children. This is sufficient to give the children of entrepreneurs the slight advantage that will make them the entrepreneurs of the next generation. Consequently, the intelligence of entrepreneurs in an economy with low social mobility will remain on an average level, and the economy will grow only slowly.

In an economy with high social mobility, on the other hand, the entrepreneurial class is formed by the most intelligent people irrespective of their family background. Since the entrepreneurs are very intelligent they can generate a lot of technological change and rapid growth. They thus make the world change rapidly, and the experience that they can pass on to their children thus depreciates so fast that it is of little or no value. The next generation of entrepreneurs will thus be formed by the intellectually gifted people rather than the children of entrepreneurs, since the children of entrepreneurs have no particular advantage in a rapidly changing world. This implies that the economy with high social mobility will enjoy consistently high growth.

Several other papers show how the allocation of talent in an economy is important for the level of growth. Murphy, Shleifer, and Vishny (1991), for example, show that when talented people are attracted to the productive sector, they create high growth, but if they instead are attracted to rent seeking activities, they create stagnation. Their model has an interesting implication regarding discrimination in a country where rent seeking is the most lucrative sector (which could be the case in Bolivia¹). If talented people are attracted to the

¹ Transparency International, a global coalition against corruption, monitors corruption perceptions around the world. According to their most recent figures (Transparency International (2009)), Bolivia is number 120 out of 180 countries investigated. This is a relative improvement since 1997, where Bolivia was found to be the second most corrupt country in the world.

rent seeking sector because it offers the highest returns, then discrimination may actually cause higher growth. This is the case if a dominant group monopolizes access to the rent seeking sector, because then the intelligent people from the excluded population will have to work in the productive sector and thus generate at least some growth.

In a related paper, Baumol (1990) argues that while it may be difficult for economic policy to affect the supply and quality of entrepreneurs, it may be possible to affect the allocation of entrepreneurship between productive sectors and unproductive sectors, such as rent seeking and organized crime.

The implication of the above mentioned studies is that to achieve optimum growth it is important that people get to work in the sectors where they are most productive. This requires that young people's educational and occupational choices be determined by talent and not limited by family background. That is, it requires high social mobility. But this is not a sufficient condition. It also requires that productive activities yield higher returns to talent than unproductive rent seeking activities. If talent is attracted to rent seeking activities rather than productive activities, then no amount of social mobility can generate growth.

Interestingly, the level of social mobility can be strongly influenced simply by the perceptions about social mobility (e.g. Alesina & Angeletos, 2005; Bénabou & Tirole, 2006). If people perceive that anybody can become successful no matter what their background (e.g. "The American Dream"), then they are more likely to engage in the activities that actually might make them successful (studying, working, inventing, investing, etc.), whereas people who think they have no chance of improving are unlikely to expend the effort it takes to succeed, thus creating a situation of self-fulfilling negative expectations.

This expectations-based mechanism could potentially be important in Bolivia, where a very large segment of the population for centuries have felt excluded and with few opportunities, but now suddenly observe that even poor people with only rudimentary education have made their way into top positions.

3. EMPIRICAL ESTIMATES OF SOCIAL MOBILITY IN BOLIVIA

There have been several previous attempts at estimating social mobility in Bolivia (Behrman, Birdsall & Székely, 1998; Dahan & Gaviria, 2001; Andersen 2001; Andersen 2003; Mercado & Leitón-Quiroga, 2009). All of these studies use standard household surveys, since there are no panel data sets available that cover the same families in Bolivia over time.

The basic idea behind all four studies is to measure how important family background is in determining the educational outcomes of young people. If family background is important in determining young peoples' educational level (and through that future income levels) social mobility is considered low. If family background is unimportant, social mobility is high.

Behrman, Birdsall & Székely (1998), Andersen (2001) and Mercado & Leitón-Quiroga (2009) measure the influence of family background directly in regressions with schooling gaps as the dependent variable and family background variables as explaining variables. Dahan & Gaviria (2001), on the other hand, measure the influence of family background indirectly by calculating the correlation of schooling gaps between siblings.

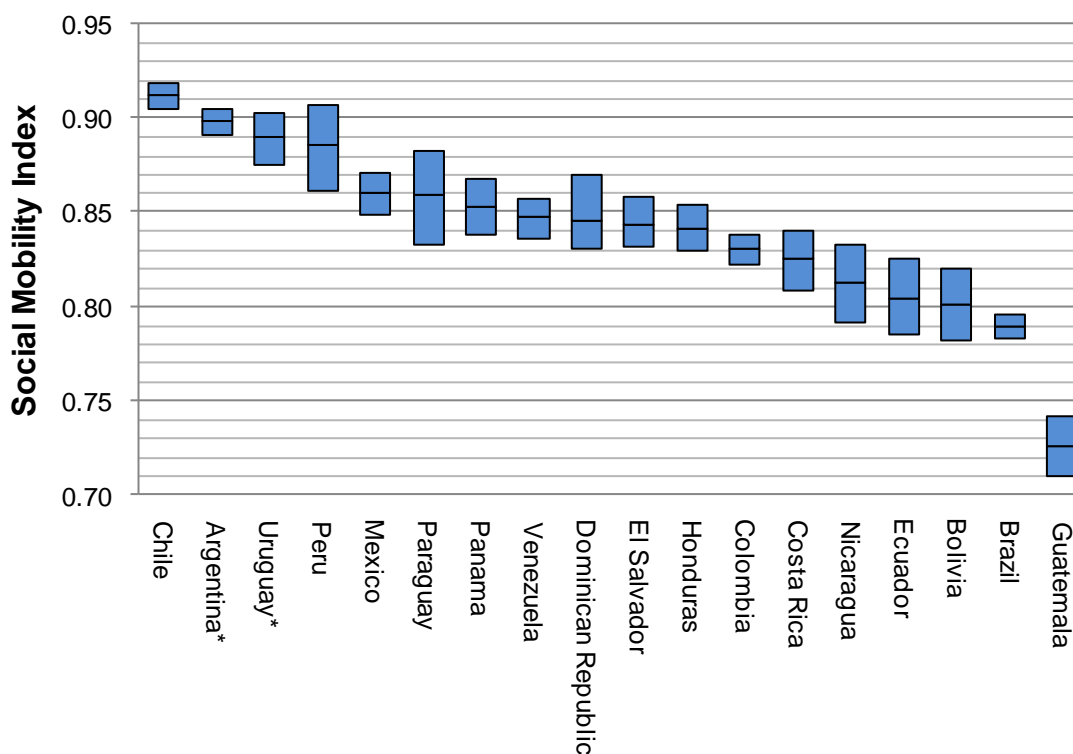
The advantage of the Dahan & Gaviria social mobility index is that it does not require the a priori definition of what family attributes are important (e.g. mother's education, family wealth, parental attitudes, etc.) Their index controls for all influences that are common to all children in the same family. The disadvantage is that at least two siblings in the relevant age range are needed for each family. This implies a dramatic reduction in the sample of young people. Worse, the ones that are left out are unlikely to be similar to those that are included in the analysis, since teenagers with many siblings are much more likely to be included.

Andersen (2001) provides some refinements and improvements to the method proposed in Behrman, Birdsall & Székely (1998). First, the method for determining the importance of family background (Fields' decomposition (see Fields 1996)) is scale-independent, so results do not depend on, for example, the currency in which income is measured. This allows for easy comparison across countries and regions. Second, the method does not require the provision of weights for the different family background variables. Third, the method allows single parent households to be included in the analysis, because the maximum of mother's and father's years of education is used rather than both at the same time. Fourth, Andersen (2001) provides confidence intervals for all social mobility estimates, so that the reader can see whether different measures are actually statistically different. Fifth, in the case of Bolivia, Andersen (2001) provides national estimates, while Behrman, Birdsall & Székely (1998) only includes urban Bolivia.

Since Andersen (2001) is the only study that reports confidence intervals on the social mobility estimates, these are the ones that will be used in this paper.

Figure 1 shows the social mobility estimates for 18 countries in Latin America. The index is defined as one minus the importance of family background, implying that higher values of the index are associated with higher social mobility. The figure shows that Bolivia is among the least socially mobile countries in Latin America together with Guatemala, Brazil, Ecuador, and Nicaragua. Chile, Argentina, Uruguay, and Peru, on the other hand, are among the most socially mobile countries in Latin America.

Figure 1: Social Mobility Index for Teenagers (age 13-19 years), with 95% confidence intervals



Source: Andersen (2001).

The widths of the confidence intervals reflect the sample sizes used to estimate the index. The estimate for Brazil is based on 11761 teenagers, which implies a relatively precise estimate. The estimate for Peru is based on only 2800 teenagers, which implies a much wider confidence interval.

Other studies provide some support for this ranking. Behrman, Birdsall & Székely (1998), for example, also find that Chile has the highest level of social mobility in Latin America, whereas Brazil, El Salvador and Paraguay are among the least socially mobile countries investigated. For Bolivia, they only report results for the urban part, which clearly does not tell the whole story. The same is true for Dahan & Gaviria, but they confirm that Brazil and Honduras are in the low end of the range, while Chile, urban Argentina and urban Uruguay are in the top end. Ferreira & Gignoux (2008) only investigate 6 countries but also find that Brazil and Guatemala have less equality of opportunity than Colombia, Ecuador and Peru.

4. CONSEQUENCES OF LOW SOCIAL MOBILITY

The theoretical studies of social mobility discussed in section 2 explained one of the main problems with low social mobility, which is inefficient use of innate talent and thus lower than optimal growth rates. Another related problem is one of incentives. Poor people have

very little incentive to study hard and work hard, if they know that the likelihood that it will improve their socio-economic status is low. Rich people do not have very good incentives either, since they were born rich and know that they will remain rich no matter how they spend their time. In order to provide good incentives for hard work and entrepreneurial activity, countries need a certain level of social mobility and numerous examples of poor people who have made great advances due to hard work and ingenuity.

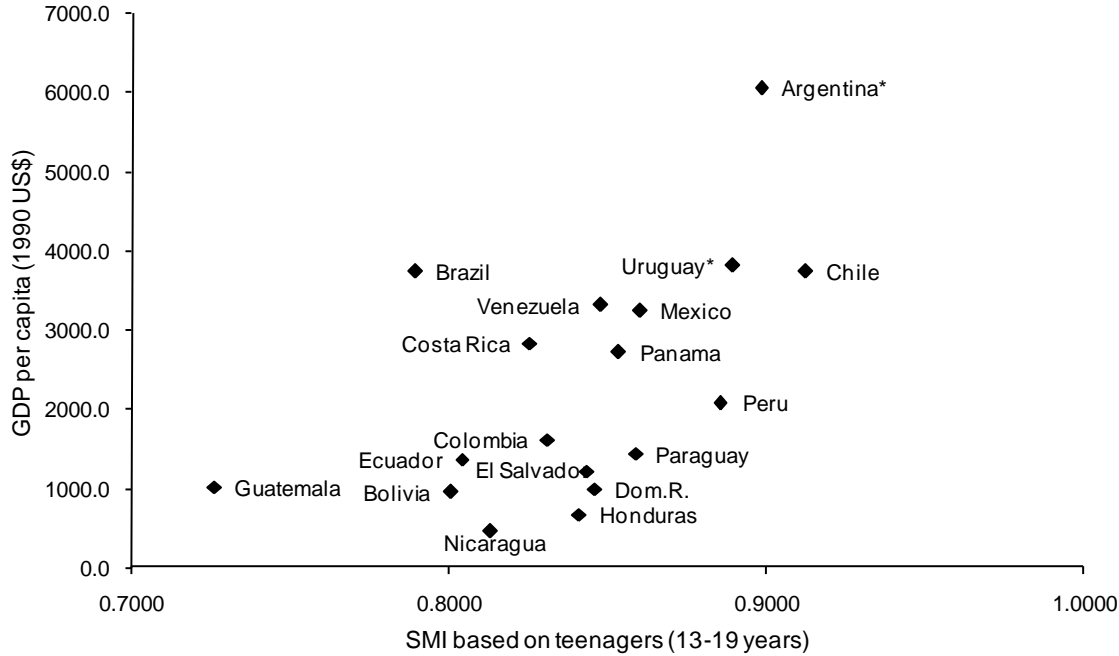
4.1 Economic Growth Rates

Andersen (2001) finds a relatively strong positive correlation between Social Mobility and GDP per capita across 18 countries in Latin America, thus lending some empirical evidence to the theoretical arguments presented above.

Figure 2 suggests that Argentina, Chile, and Uruguay are located in high growth – high social mobility equilibria, while Guatemala, Bolivia, Nicaragua, and Colombia are stuck in low growth – low social mobility equilibria (assuming that the higher GDPs are caused by higher long term growth rates).

The correlation between GDP per capita and the Social Mobility Index is 0.53 across Latin American countries. The relatively strong correlation, however, does not imply anything about the direction of causality. It may be that low social mobility causes low growth, or it may be that low growth causes low social mobility. Low growth and low mobility may also be jointly determined as the theoretical models discussed in section 2 indicate.

Figure 2: Social Mobility and GDP Per Capita



Note: Argentina and Uruguay estimates are based on urban populations only.
 Source: Andersen (2001).

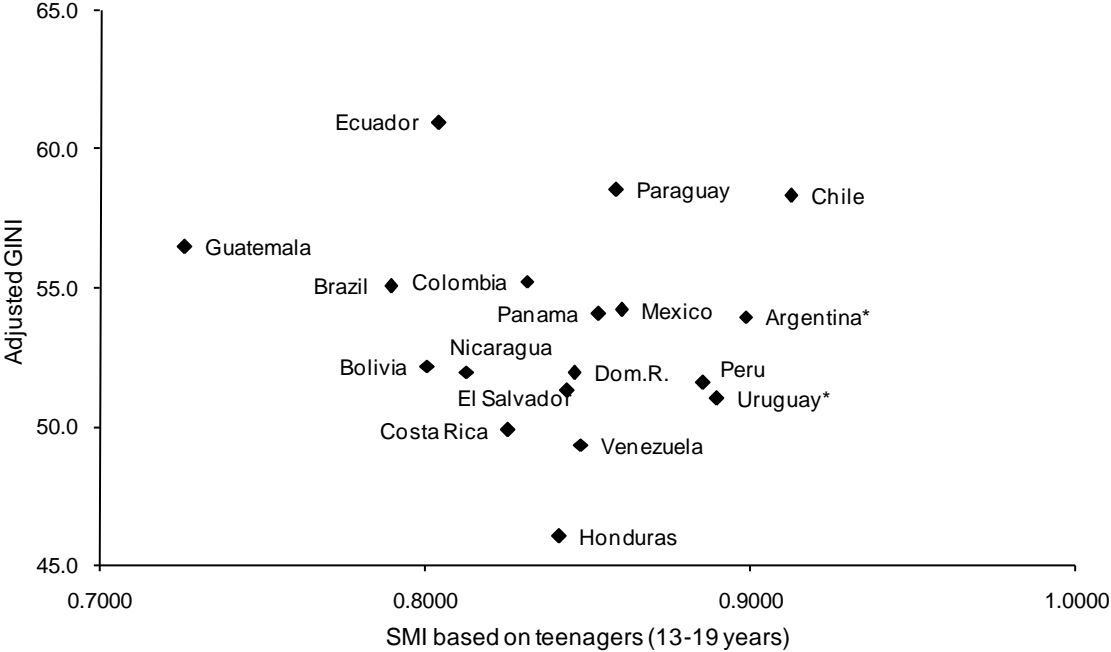
Getting out of that low growth – low social mobility equilibrium should be a high priority. Not only would Bolivia likely experience higher growth rates if social mobility is increased, it would probably be good quality growth in the sense that it would have a relatively large impact on inequality and poverty.

5.2 Inequality and Poverty

In countries where social mobility is high and people often marry outside their own class, consumption patterns are likely to be more equal than in countries with low social mobility (Kremer, 1996). This is so because people who have become rich either through education or through marriage are likely to help support their poorer relatives. If the rich and the poor are separated through low social mobility, such sharing is less likely to occur and consumption patterns will be more unequal.

Figure 3 shows that there is a very weak negative correlation between social mobility and income inequality ($\rho = -0.12$). Guatemala, Ecuador, Brazil, and Bolivia all have low social mobility and high income inequality. In these countries there is a large gap between rich and poor and there is little chance of crossing that gap.

Figure 3: Social Mobility and Income Inequality



Note: Argentina and Uruguay estimates are based on urban populations only. The GINI coefficients are from Székely and Hilgert (1999), and they are adjusted to be reasonably comparable across countries. Source: Andersen (2001).

Chile, Paraguay, and Argentina also have high gaps between rich and poor, but the chance of crossing the gap is substantially higher. This implies that the incentive structure in these countries is much better.

While low mobility and high income inequality is clearly the worst combination, high mobility and low income inequality is not necessarily the best. High income inequality and high mobility (as in the case of Chile) may provide better incentives for people to study hard, work hard, be innovative, and take risks, because the returns are higher. Better incentives may lead to greater growth in the long run because the work force is better motivated, better educated, more innovative, and less dependent on social safety nets.

5. RECENT CHANGES IN SOCIAL MOBILITY IN BOLIVIA

Mercado & Leitón-Quiroga (2009) is to date the only study which has investigated changes in Bolivian social mobility over time. Their study compares the Social Mobility Index of urban Bolivia in 1993 to that of urban Bolivia in 2003-2004, both using a slightly modified version of the Andersen (2001) methodology. They find improvements over time for all urban teenage-groups, except indigenous women. By far the biggest improvement is observed among indigenous males.

The rest of this section will make a similar comparison of changes in social mobility in Bolivia over time, but for the whole country, and for the period 1997 to 2007.

5.1 Changes in schooling gaps

The central variable for the analysis of social mobility is schooling gaps – or missing years of schooling – for teenagers aged 13 to 19 living at home with their parents or adoptive parents².

Schooling gaps are defined as the age of the teenager minus 6 (normal school start age) minus years of education:

$$SG_i = AGE_i - 6 - EDU_i$$

In 1997, the average schooling gap for teenagers in Bolivia was 2.33 years, whereas by 2007 this had dropped to 1.07 years. The drop is particularly large for rural areas, which had an average schooling gap of 3.76 years in 1997 but only 2.00 in 2007. The drops among male and female teenagers were about the same, both ending up with average schooling gaps very close to 1.07 years.

² A teenager who has already left home cannot be included in this kind of analysis because of the lack of information about family background. But in Bolivia, only about 5% of teenagers are excluded from analysis because of this restriction.

These numbers demonstrate that the Bolivian education system has become substantially better at keeping teenagers in school, suggesting that the enormous efforts on both the supply side and demand side are paying off.

5.2 Schooling gap regressions

The main tool to measure social mobility is a schooling gap regression, which indicates which factors explain the differences in schooling gaps between teenagers³. If family background variables are important, social mobility is considered low, since a teenager's future is to a large extent determined by his parents' education and income level. In contrast, if the family background variables are unimportant, then social mobility is considered high, because teenagers from different backgrounds have similar educational opportunities.

Table 1 compares shows the regression results and the Field's decomposition for Bolivian teenagers in 1997 and in 2007. In 1997, the maximum education of the parents is the most important variable explaining a teenagers schooling gap, accounting for 13.3% of the total variation in schooling gaps. By 2007, the importance of this family background variable had dropped to 8.8%. Similarly, in 1997 household income per capita was very important, explaining 7.0% of the variation in schooling gaps, whereas by 2007, the importance of this variable had dropped to 3.2%.

In general, the explanatory power of the schooling gap model has decreased from an $R^2 = 0.3613$ in 1997 to $R^2 = 0.2589$ in 2007. Thus, schooling gaps have both become smaller and less predictable, indicating that the importance of unobserved characteristics, such as intelligence, motivation and effort, have become more important, while family background variables beyond the control of the teenager, have become less important.

Table 1: Schooling gap regressions and Field's decompositions for 1997 and 2007

Explanatory variables	1997		2007	
	Coefficient (t-value)	Factor Inequality Weight (%)	Coefficient (t-value)	Factor Inequality Weight (%)
Household income per capita	-0.3263 (-7.87)	7.0	-0.2008 (-2.42)	3.2
Maximum parental education	-0.1488 (-12.59)	13.3	-0.0987 (-6.8)	8.8
Age of head of household	-0.0049 (-1.42)	0.0	-0.0130 (-3.50)	-0.1
Dummy female headed household	-0.4268 (-2.35)	0.0	-0.2097 (-2.54)	0.0
Dummy household head single	-0.2027 (-1.32)	0.0	0.3655 (5.23)	0.6
Dummy younger sister	0.1104 (1.19)	0.0	0.1599 (1.73)	0.5

³ Please see Andersen (2001, 2003) for details on the methodology.

Dummy younger brother	0.1129 (1.31)	0.0	0.0177 (0.22)	0.0
Dummy older sister	0.0173 (0.35)	0.0	0.0713 (0.74)	0.0
Dummy older brother	0.1296 (2.17)	0.0	0.1038 (1.79)	0.0
Dummy female	0.1100 (1.39)	0.0	0.0407 (0.54)	0.0
Age	0.3605 (8.35)	6.3	0.3005 (8.73)	6.7
Dummy indigenous	0.1384 (1.07)	0.5	0.5351 (2.64)	2.5
Dummy adopted	0.3503 (2.16)	0.1	0.1908 (2.05)	0.1
Average regional log income	0.8526 (2.73)	-1.7	0.4453 (2.13)	-1.1
Average regional education	-0.5594 (-2.98)	2.6	-0.3276 (-2.97)	1.9
Dummy urban	-1.0382 (-4.36)	7.8	-0.4696 (-1.80)	2.9
Constant	-1.1259 (-1.06)	0.0	-1.3426 (-1.19)	0.0
	#obs = 5444	R² = 0.3613	#obs = 2475	R² = 0.2589

Source: Author's estimation based on household surveys from 1997 and 2007.

Note: the Factor Inequality Weights from the Fields' decomposition can be interpreted as each explanatory variable's contribution to explaining the total variation in the dependent variable.

5.3 The Social Mobility Index

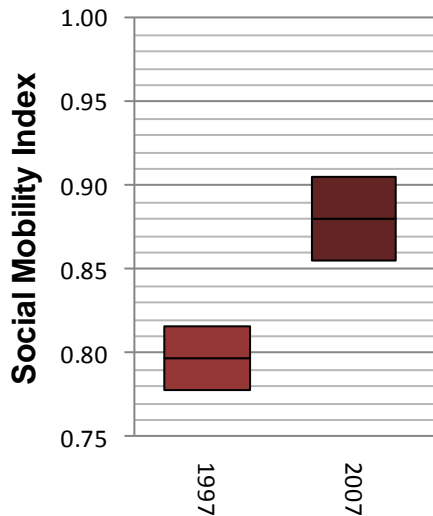
The results from the schooling gap regression can be used to calculate a Social Mobility Index. Following Andersen (2001), we define the Social Mobility Index as 1 minus the sum of the Factor Inequality Weights associated with the two family background variables:

$$SMI = 1 - (FIW_{hhypc} + FIW_{maxedu})$$

Thus, for 1997, the SMI is calculated as $1 - (0.0700 + 0.1316) = 0.7973$. Likewise, for 2007 we find an $SMI = 1 - (0.0319 + 0.0879) = 0.8802$.

In order to find out whether the SMI from 2007 is statistically significant from the SMI from 1997, we estimate 95% confidence intervals around the point estimates using Stata's bootstrapping function. The results are illustrated in Figure 4, which suggests that the Social Mobility Index in 2007 is indeed significantly higher than in 1997.

Figure 4: Social Mobility Index for Bolivian teenagers, 1997 and 2007, with 95% confidence intervals.

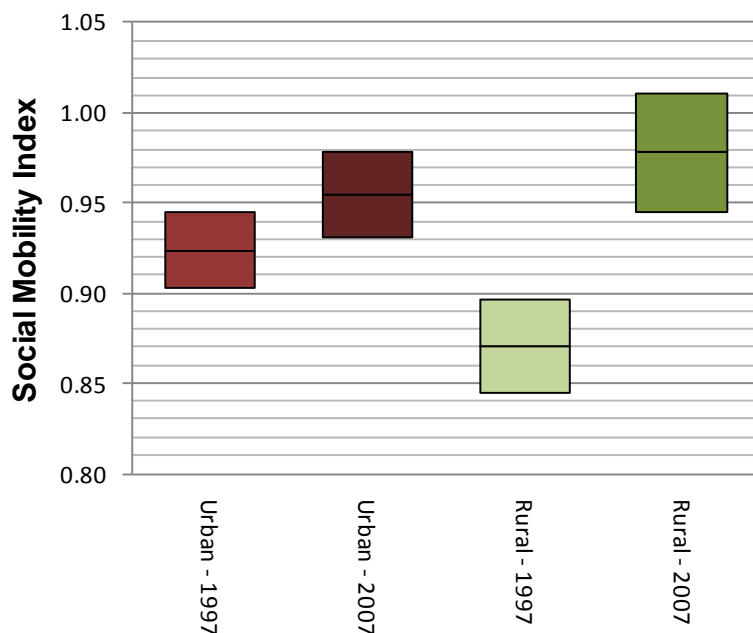


Source: Author's estimation.

5.4 Comparing social mobility in rural and urban areas

Figure 5 compares changes in SMI between 1997 and 2007 for urban and rural areas separately. It is clear that the improvement in social mobility at the national level is mostly due to improvements in rural areas, which have seen a very large and statistically significant improvement in social mobility from 0.82 in 1997 to 0.91 in 2007. Urban areas, on the other hand, have only experienced a smaller and statistically insignificant improvement in social mobility.

Figure 5: Social Mobility Index for urban and rural teenagers, 1997 and 2007, with 95% confidence intervals.



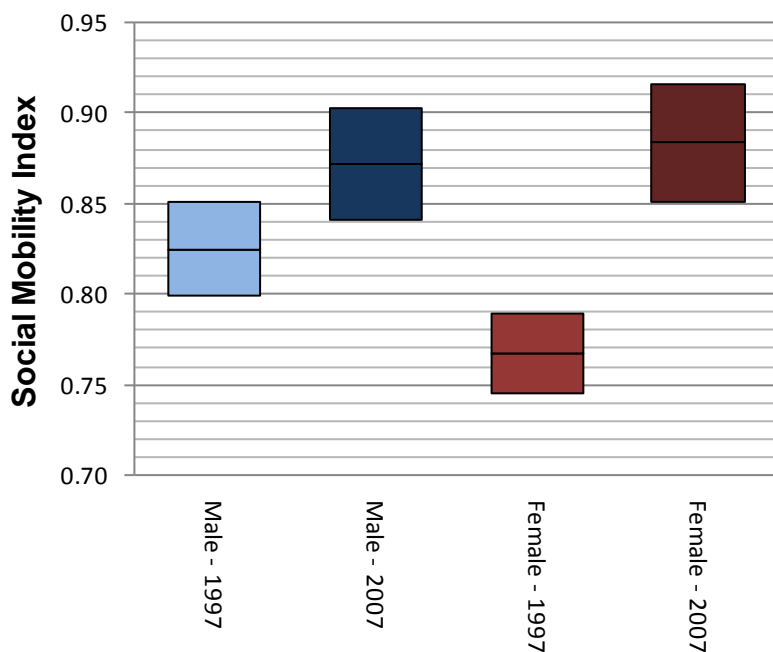
Source: Author's estimation.

5.5 Comparing social mobility for male and female teenagers

Figure 6 compares changes in SMI between 1997 and 2007 for male and female teenagers separately. It is clear that most of the improvement in social mobility at the national level is due to improvements for girls, which have seen a very large and statistically significant improvement in social mobility from 0.77 in 1997 to 0.88 in 2007. Boys, on the other hand, have experienced a much smaller and statistically insignificant improvement in social mobility.

This result is quite interesting, since male and female teenagers in both years had the same average schooling gap, and thus the same reduction in schooling gaps. This indicates that it is not simply the general reduction in schooling gaps that drive the increase in social mobility, although it of course helps.

Figure 6: Social Mobility Index for male and female teenagers, 1997 and 2007, with 95% confidence intervals.



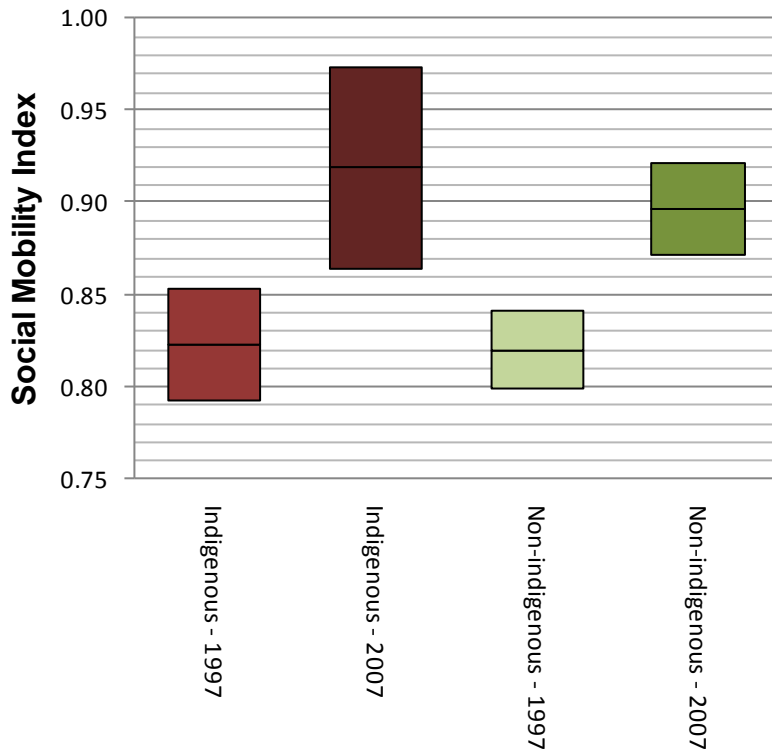
Source: Author's estimation.

5.6 Comparing social mobility for indigenous and non-indigenous teenagers

Figure 7 compares changes in SMI between 1997 and 2007 for indigenous and non-indigenous teenagers separately. Teenagers are considered indigenous if they learned to speak in one of the indigenous languages of Bolivia, whereas they are considered non-indigenous if they learned to speak in Castellano or a foreign language. This is thus a rather strict definition of indigenous, as many people might consider themselves indigenous even if they grew up learning Castellano. By this strict definition, 30% of teenagers were considered indigenous in 1997 and 18% in 2007.

From this figure it becomes clear that the improvement in social mobility at the national level is due to significant improvements both for indigenous and non-indigenous teenagers.

Figure 7: Social Mobility Index for indigenous and non-indigenous teenagers, 1997 and 2007, with 95% confidence intervals.

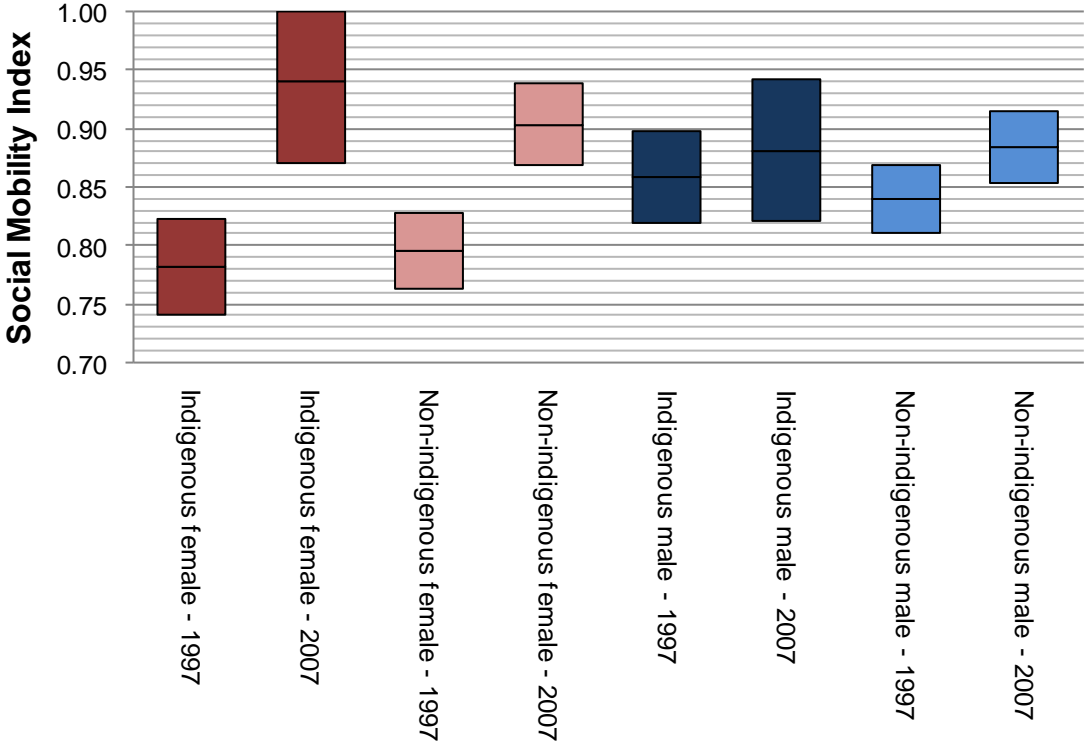


Source: Author's estimation.

Although the groups become quite small, it is possible to calculate SMIs for indigenous males, indigenous females, non-indigenous males and non-indigenous females separately and still get statistically significant changes over time.

Figure 8 shows that both indigenous and non-indigenous women have experienced significant improvements in social mobility between 1997 and 2007, whereas neither indigenous males nor non-indigenous males have seen significant changes.

Figure 8: Social Mobility Index for indigenous and non-indigenous males, and indigenous and non-indigenous female teenagers, 1997 and 2007, with 95% confidence intervals.



Source: Author's estimation.

6. CONCLUSIONS

This paper has shown that social mobility in Bolivia has increased dramatically between 1997 and 2007, especially among rural and female teenagers.

This is very good news, as low social mobility in Bolivia has for centuries constituted a formidable barrier to development, resulting in high and persistent poverty rates and low economic growth (e.g. Andersen, 2001; Mercado *et al*, 2002; Andersen, 2003; Azevedo & Bouillon, 2009).

Some of this improvement is likely due to a change in perceptions about social mobility. Rural, indigenous teenagers frequently dropped out of school in the past because they did not perceive any opportunities for taking advantage of formal schooling. Now, on the other hand, they see people of similar modest backgrounds reaching very high and prestigious positions. Such real life examples of social mobility can cause mental barriers to tumble down, and motive teenagers to study, work and try to improve their lot. And simply by trying, they will dramatically improve their possibilities of succeeding, as well as contribute to the economic development of the country.

But part of the improvement is also due to the enormous efforts made by both the current and previous governments, with help from the international cooperation, to increase the supply of education facilities and to reduce obstacles against school attendance. The benefits of all these investments in education are finally, thankfully, beginning to show, and it looks like Bolivia may have finally escaped the low mobility – low growth trap and is heading for a high mobility – high growth equilibrium.

REFERENCES

- Alesina, A. & G.-M. Angeletos (2005) "Fairness and Redistribution." *American Economic Review*, 95 (4): 960-980.
- Andersen, L. E. (2003) "Social Mobility in Latin America: Links with Adolescent Schooling" in Duryea, S., A. Cox-Edwards & M. Ureta (eds.) **Critical Decisions at a Critical Age: Adolescents and Young Adults in Latin America**. Washington D.C.: Inter-American Development Bank. Chapter 6, pp. 219-247.
- Andersen, L.E. (2001) "Social Mobility in Latin America." Institute for Socio-Economic Research, Universidad Católica Boliviana. Working Paper No. 03/2000.
- Azevedo, V. & C. P. Bouillon (2009) "Social Mobility in Latin America: A Review of Existing Evidence. Inter-American Development Bank, August 2009.
- Baumol, W.J. (1990) "Entrepreneurship: Productive, Unproductive and Destructive". *Journal of Political Economy*, Vol. 98(5): 893-921.
- Behrman, J.R., N. Birdsall, M. Székely (1998) "Intergenerational Schooling Mobility and Macro Conditions and Schooling Policies in Latin America." Inter-American Development Bank, Office of the Chief Economist, Mimeo.
- Bénabou, R. J. Tirole (2006) "Belief in a Just World and Redistributive Politics", *Quarterly Journal of Economics* **121**(2), 699-746.
- Dahan, M. & A. Gaviria (2001) "Sibling Correlations and Intergenerational Mobility in Latin America." *Economic Development and Cultural Change* **49**(3): 537-54.
- Ferreira, F. H. G. & J. H. Gignoux (2008) "The Measurement of Inequality of Opportunity: Theory and an application to Latin America." World Bank Policy Research Working Paper 4659. Washington, DC, United States: World Bank.
- Fields, G.S. (1996) "Accounting for Differences in Income Inequality." Draft, School of Industrial and Labor Relations, Cornell University, January.
- Hassler, J., J.V. Rodríguez Mora (1998) "IQ, Social Mobility and Growth." Institute for International Economic Studies, Stockholm University, Seminar Papers No. 635, January.
- Kremer, M. (1996) "How Much Does Sorting Increase Inequality?" NBER Working Paper No. 5566, May.
- Mercado, A. F. & J. G. M. Leitón-Quiroga (2009) "The Dynamics of Poverty in Bolivia" *Latin American Journal of Economic Development*, 11: 45-82.
- Mercado, A. F., L. E. Andersen, O. Nina & M. Medinaceli (2002) "Movilidad Social: Clave para el Desarrollo." Programa de Investigación Estratégica en Bolivia (PIEB) – Instituto de Investigaciones Socio-Económicas (IISEC), Universidad Católica Boliviana, La Paz.
- Murphy, K.M., A. Scheifer, R.W. Vishny (1991) "The Allocation of Talent: Implications for Growth." *Quarterly Journal of Economics*, Vol 106(2): 503-530.

- Raut, L.K. (1996) "Signalling Equilibrium, Intergenerational Mobility and Long-Run Growth." University of Hawaii-Manoa, Draft, February.
- Roemer, J. E. (1998) **Equality of Opportunity**. Cambridge, MA: Harvard University Press.
- Székely, M., M. Hilgert (1999) "What's Behind the Inequality We Measure: An Investigation Using Latin American Data for the 1990s." Research Department at the Inter-American Development Bank. Draft, December.
- Transparency International (2009). *The Corruption Perception Index 2009*. http://www.transparency.org/policy_research/surveys_indices/cpi/2009/cpi_2009_table.