

**An Analysis of Disparities in Education:  
The Case of Primary School Completion Rates in Bolivia**

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**Abstract**

The Education Reform Program launched in the mid-1990s by the Government of Bolivia had important accomplishments, particularly by increasing the coverage of primary education. However, the high rates of coverage observed at national level conceal the inequality in the distribution of schooling across children from different income groups, from indigenous households or even among municipalities from different areas of the country. This document intends to present a brief diagnosis of disparities in education access and attainment exploring data at individual and municipal level. The document finds that children from low-income families, indigenous groups and/or rural areas are less likely to finish primary school. Similar disparities are evident when observing data at municipal level. High poverty incidence, high indigenous-groups concentration and high dispersion of the population, are basic characteristics of municipalities with low primary school completion rates. The document also suggests a simple methodology that allows to identify municipalities that are high performers and low performers. This approach combines quantitative and qualitative analysis and may well bring to light important actions that could be undertaken in the poorly performing school districts to improve their ability to improve their performance

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## Introduction

During the last two decades, the Bolivian public sector has undergone a drastic redefinition of its role. The structural reform process has featured macroeconomic adjustment and significant political, administrative, and social sector reforms. In the early 1990s, the low level of basic education coupled with poor coverage and the low quality of education led to the consensus that strong action needed to be taken to reform the country's education system. After further discussions and diagnostic work, the Bolivian Government launched the Education Reform Program (ERP) in 1994.

Initially, the ERP focused on the transformation and strengthening of the educational system, improvement of the pedagogical quality and development of human resources in education. The next steps in the government's education reform efforts aimed at enhancing community participation in the educational process (through the participation of parents, teachers, nucleus<sup>1</sup> and district principals); and (b) strengthening management capacities at the local level. The institutional strengthening of district management at the municipal level as the local operators of the education sector, increased access to schooling and decreased attrition rates of female students in rural areas all began receiving more attention.

Even though significant improvements in key education indicators at national level have been observed, in particular those related to access to education<sup>2</sup>, the country has still a long path to walk towards universal primary education. In Bolivia, near 320 thousand children between 5 and 15 years old do not attend school. This represents 14% of children population between those ages. Similarly, close to 85 thousand 15-year old children (44% of total cohort ) haven't completed primary school, of which 40 thousand never will since they don't attend school anymore. Even though these figures present a worrisome panorama, they conceal the inequality in the distribution of schooling across different income groups, ethnic groups and among municipalities from different areas of the country. This suggests the importance of analyzing not only aggregate indicators but also decomposing them for different groups. This type of analysis may allow us to have a better understanding of the nature of the problem.

This document intends to present a brief diagnosis of disparities in access to education, exploring information at individual level as well as at municipal level. The first part of the document presents an assessment of the disparities observed in attendance and attainment of children from different income groups, indigenous origin and areas. The second part of the document carries out an analysis of the disparities observed in primary school completion rates among municipalities. This section also identifies municipalities where, in spite of high poverty incidence, high indigenous-group concentration and high dispersion of the population have accomplished a better or worse performance than other similar municipalities. This kind of analysis can be performed by the Government in order to draw lessons from the actions of high-performers and low-performers that may

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<sup>1</sup> An educational nucleus is a group of eight to nine schools that share resources.

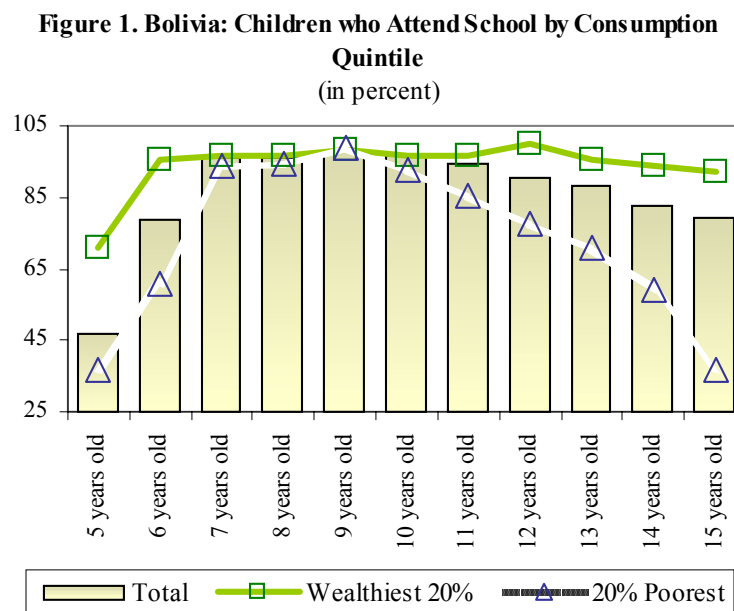
<sup>2</sup> Annex 1 contains a summary of key education indicators.

enhance future policy actions and allow better focalized interventions. Finally, the last section concludes summarizing the main findings.

## I. An insight to school attendance and attainment

*Do indigenous poor children in rural areas go to school?*

Considerable differences can be found when comparing school attendance between poor and wealthy children. One notable feature of education in Bolivia is that most children, whether rich or poor, attend school in the early grades but this picture shifts when children become 11 years old. At this stage, a gap between children in the lowest income quintile and children from higher income groups emerges. While wealthiest children stay in school, poorest children school attendance falls dramatically as they age. At the age of fifteen, barely 36% of poorest children attend school while above 92% of wealthiest children do (see Figure 1).



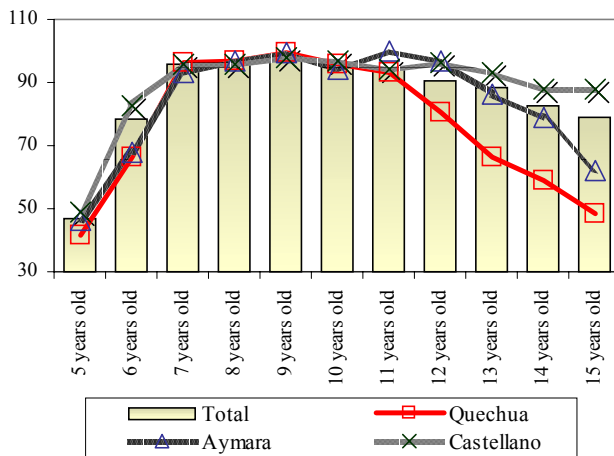
Source: Estimations based on household surveys.

A prior study on factors associated with academic performance in Bolivia states that students' socioeconomic status is one of the main variables affecting school performance (Mizala, 1999). Considering that low academic performance can lead to higher repetition, which, in turn, could increase drop out rates, these findings can be closely related to the scenario described above.

The same pattern can be observed between indigenous children and non-indigenous children. At early stages of school both groups attend school on an equal basis. As children age, the gap between ethnic groups starts to increase. By the age of 15 the picture worsens. A 40 percentage-point gap in school attendance can be observed between *quechuas* and *castellanos*, and a 25 percentage-point gap exists between

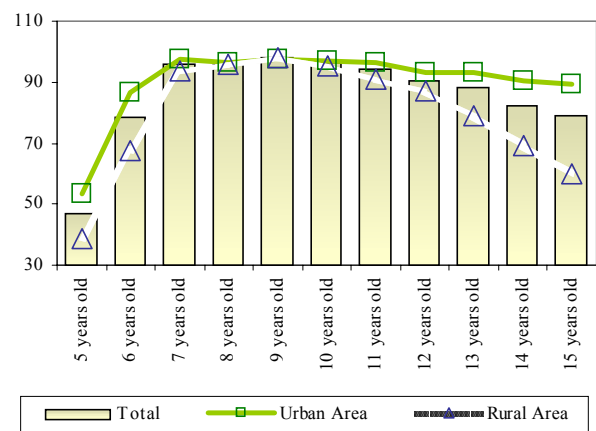
*aymaras* and *castellanos* (see Figure 2). In sum, 96 thousand *quechuas* children and 21 thousand *aymaras* children don't attend school. Likewise, urban areas exhibit higher rates of school attendance at almost every age cohort. This lagging performance in rural areas may be reflecting its high concentration of indigenous population and/or low-income households (see Figure 3).

**Figure 2. Bolivia: Children who Attend School by Ethnic Origin**  
(in percent)



Source: Estimations based on household surveys.

**Figure 3. Bolivia: Children who Attend School by Area**  
(in percent)



Source: Estimations based on household surveys.

### *Supply and Demand of education: An insight to absence from school*

The lagging performance of children from low-income families, indigenous groups and/or rural areas reflects problems of the supply and demand of education. In Bolivia, about 90% of children –and practically all of lowest-income quintile children- attend public schools. These schools, generally, present poor education quality. High-income children can avoid this by attending private schools where educational outcomes are better. For instance, around 5,500 low-income children don't attend school because there are no teachers in their community. In contrast, none of high-income children face this problem. In rural areas not only teachers absence is a critical problem but also the distance of schools. About 24,000 rural children don't attend school because the nearest school is too far while less than 70 urban children (0.00%) tackle this problem.

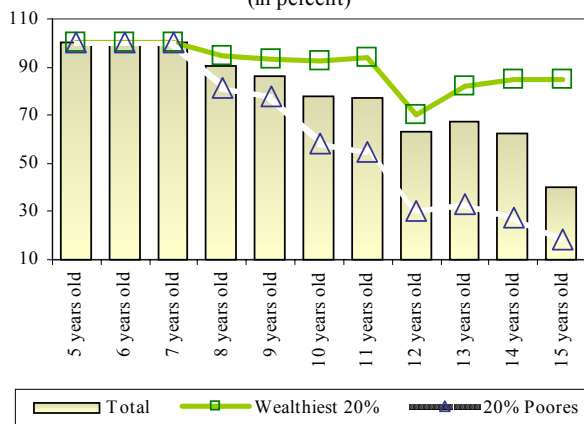
Absence from school, however, cannot be attributed solely to supply problems. As children age, the opportunity cost associated with sending them to school increases particularly for low-income families who need them for their labor. While around five thousand children from high income families don't attend school because of financial problems, near 35-thousand low-income children dropout school as a result of financial problems. Most of these children start working as they age. At the age of 15, about ten thousand children work of which 45% belong to the lowest-income quintile. In addition, as demonstrated by a study on demand-side of education in rural Bolivia, more than 7% of children between 7 and 14 years old, declared on a survey that they work for wages contributing around 19% of their household income (Liang, 1997). On the other hand, none of 15-year old high-income children leave school because of money problems.

Financial constraints are a common cause for drop out and low enrollment rates not only in Bolivia, but also in other developing countries. An empirical analysis shows that the two main factors affecting school attendance and drop out rates in Zambia are poverty levels forcing children to work and imperfect capital markets, both of which are closely related to financial problems (Jensen, 1997). Moreover, the second main reason, after poor health, for drop outs in the Philippines is economic constraints and sometimes the need for children to work (World Bank, 2001). In sum, both, supply and demand aspects are relevant, as corroborated by many other prior studies on developing countries (United Nations, 1999; Jensen, 1997; and Chowdhury, 1993).

### *Individual characteristics behind low schooling attainment*

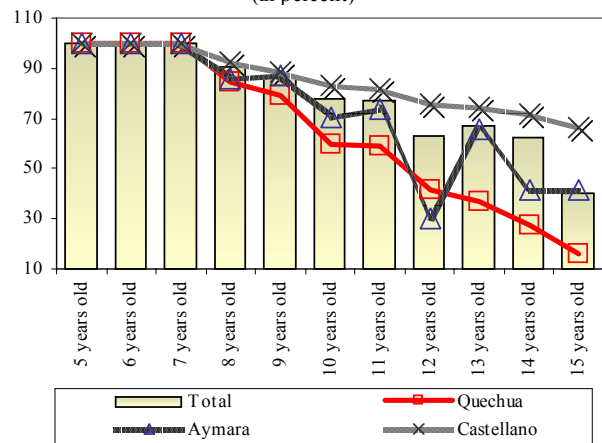
The evidence presented so far suggests that more children begin school than they finish, particularly those from poor households and/or indigenous families. In consequence, schooling levels attained by children are very different depending on certain characteristics. For instance, a fifteen-year-old child should have completed at least primary school, a level that is attained by most of high-income children. However, only 19% of the 15-year old children from low-income families finish primary school (see Figure 4). Although children’s educational attainment varies strongly depending on their economic background, ethnicity plays an equally important role. Children in native households have a lower educational attainment compared to their non-native counterparts. The gap between these groups widens as children age. By the time children have reached 15, only 16% of *quechuas* children have completed primary school (see Figure 5).

**Figure 4. Bolivia: Children that Attained the Expected Grade by Consumption Quintile**  
(in percent)



Source: Estimations based on household surveys.

**Figure 5. Bolivia: Children that Attained the Expected Grade by Ethnic Origin**  
(in percent)



Source: Estimations based on household surveys.

### *Does gender matter?*

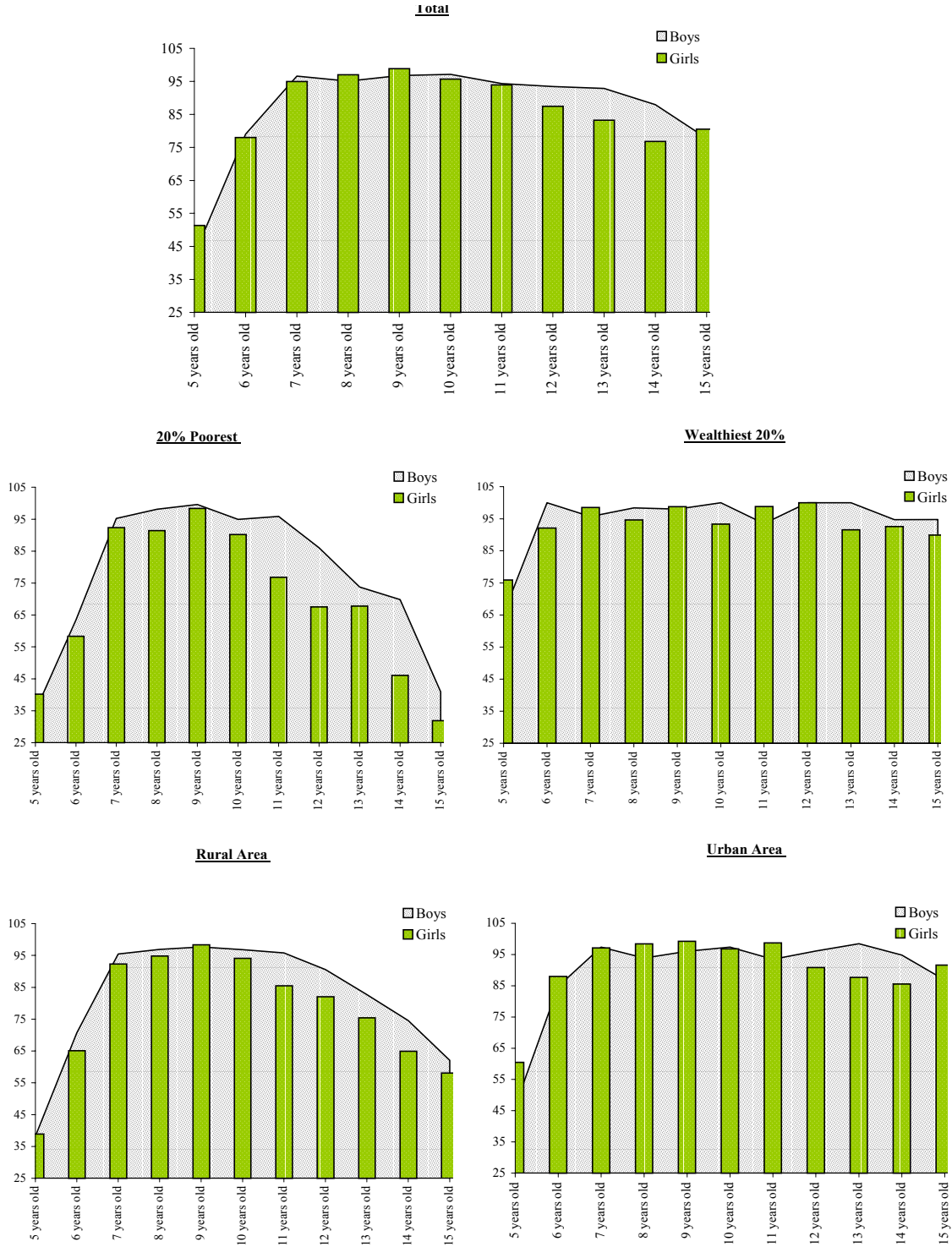
Students' gender is another important factor to take into account when considering attendance. As observed in Figure 6 upper panel, Bolivia does not present a significant gender gap in terms of total school attendance. Throughout most of the primary education years (ages 5 to 11), there is an almost insignificant difference between boys and girls' school attendance, which fluctuates between 1 and 2 percentage points. Although this small gender gap increases at ages 12 to 14, it almost disappears again by age 15.

As observed in the more detailed graphs in Figure 6, school attendance between ages 5 and 7 increases at a similar pace for boys and girls and then, it remains more or less constant until age 10. Although the poorest as well as rural groups show lower attendance than the wealthiest and urban groups at ages 5 and 6, there is a very small average gender gap of only 4.6 percentage points during this period. Between ages 7 and 10, attendance reaches the maximum level for all groups – poorest, wealthiest, rural, and urban – with an almost insignificant gender gap.

The increasing and steady attendance patterns, along with the almost insignificant gender gap, is common to all cases during the first period. However, during the second period (ages 11 to 15), poorest and rural populations show a sharper decline and a larger gender gap than their counterparts. Girls' attendance in poorest and rural populations falls one year earlier than that of boys. While 11 year-old boys still show high attendance of approximately 95.7% (poorest and rural pop.), girls' attendance falls to 76.8% and 85.5% (poorest and rural pop., respectively). This generates a larger average gender gap of 14.7 percentage points for these cases. In contrast, attendance of wealthiest and urban groups remains at a high level around 90% and presents small gender gaps fluctuating between 0 and 8.4 percentage points. Interestingly, despite the emergence of a larger gender gap, attendance levels of boys and girls converge to almost the same level by the end of primary school, leaving a gender gap of only 9 (poorest), 4 (rural), and 4.8 (wealthiest and urban) percentage points at age 15. Thus, it can be concluded that the largest gender gap is present in the poorest and rural populations and only during a temporary period, between ages 11 and 15.

Although differences emerge when considering 'socioeconomic status' and 'area', overall attendance patterns do not vary significantly between gender. It can be inferred that due to an almost insignificant gender gap until age 10, children and/or parents do not make different educational decisions or choices based only on students' gender. Although girls' early declining period may temporarily enlarge the gender gap for some cases, the general pattern of attendance as well as its starting and end points are similar for boys and girls. These data present interesting results, given the significance of gender disparities and its relevance on the attainment of primary education goals. It can be concluded that Bolivia is very close to achieving equal educational opportunity for girls and boys.

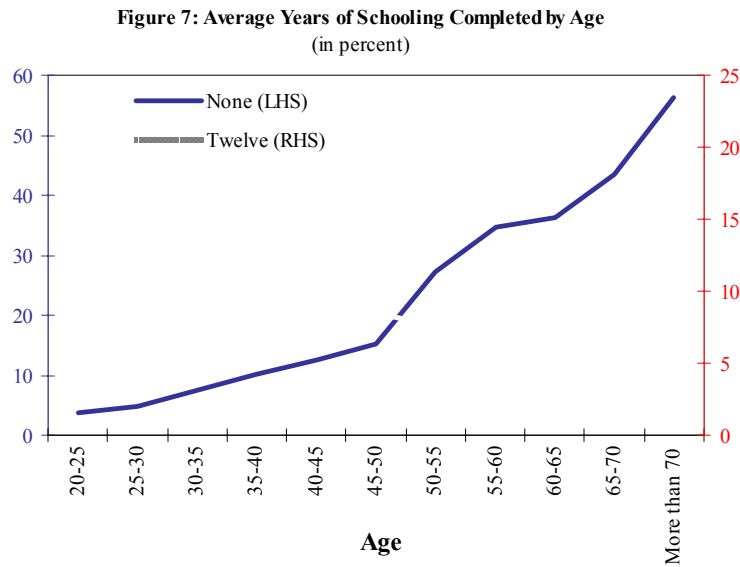
**Figure 6: School Attendance by Gender and Selected Characteristics**



Source: Estimations based on household surveys.

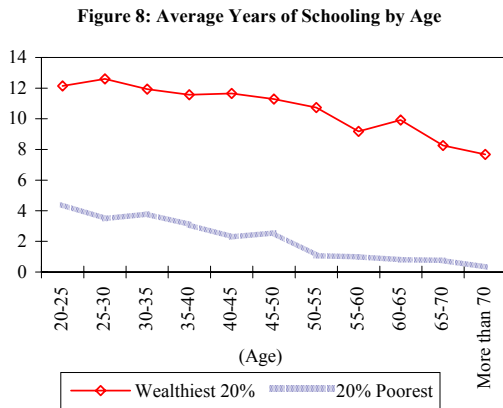
*Education gaps across different cohorts: Is there any improvement?*

Even though there is still a long path to achieve universal primary education in Bolivia, the efforts undertaken by different governments improved the education scheme over the last decades. On one hand, there is less people that have no schooling at all. As seen on Figure 7, near half of people over 60 years of age have no schooling. In contrast, only 3.7% of people between ages 20 and 25 have no-schooling reflecting the wider access to education in the last decade. On the other hand, the number of people graduating from school increased. Near 23% of people between ages 20 and 25 completed twelve years of school and only 7% of people over 60 years of age did (see Figure 7).

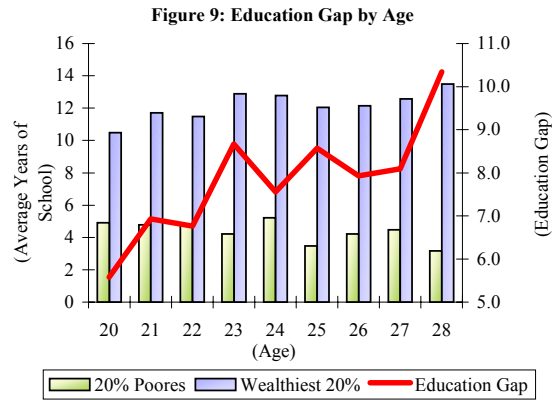


Source: Estimations based on household surveys.

The improvements mentioned above resulted in an increase in the average years of schooling of both, rich and poor. The gap between these groups, however, remains wide along different cohorts (see Figure 8). A significant improvement can be observed as people become under 30 years of age. In average, 28-year old wealthy people have 10 years more of schooling completed than their poorest counterparts. The gap becomes smaller for younger people. For the 20-year old group, the gap becomes smaller but remains high, five and a half years of education divide these groups (see Figure 9).

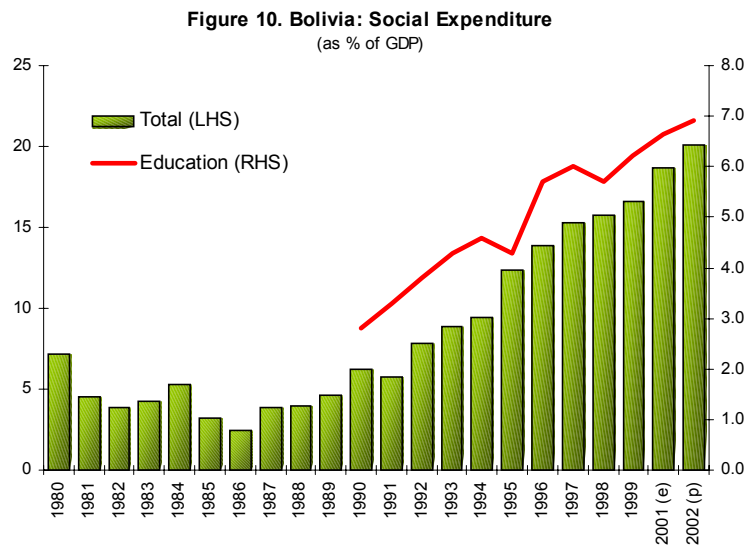


Source: Estimations based on household surveys.



Source: Estimations based on household surveys.

The higher educational attainment of recent generations may be the fruit of the boost observed in social spending during the last decade. Throughout the economic turmoil and the subsequent adjustment process after the hyperinflation in the mid-80s, social expenditure was not a priority. High cuts of social expenditure were observed, reaching its minimum in 1986 where it represented only 8% of Government's total expenditure. However, the coin flipped the following years. The subsequent Bolivian governments progressively emphasized the importance of social policy allocating more resources to education, health, basic sanitation, rural and urban development, among others. The education sector, however, was one of the most benefited. Today, the education sector receives one-third of the resources assigned to social expenditure (see Figure 10).



Source: Unidad de Análisis de Política Económica (1998).

## II. A closer look at municipal governments performance

Up to now, the analysis has focused on the individual characteristics that mainly explain the different performance of children across different characteristics. The analysis can be expanded to a municipal level in order to identify if, given certain characteristics, some municipalities present high or low performance. This section particularly focuses on the analysis of the disparities observed in primary school completion rates among municipalities.

### *Poverty incidence*

As presented above, low-income families have low education outcomes. Similarly, municipalities where poverty incidence is high, primary completion rates are low. In municipalities where poverty incidence is lower than the national-average (near 60%), the mean primary school completion rate (81%) is 9 percentage points above the national average. In low-income municipalities, however, the proportion of children graduating from primary school is 30 percentage points lower than their wealthiest counterparts (see Table 1).

**Table 1: Primary Completion Rates by Poverty Incidence**

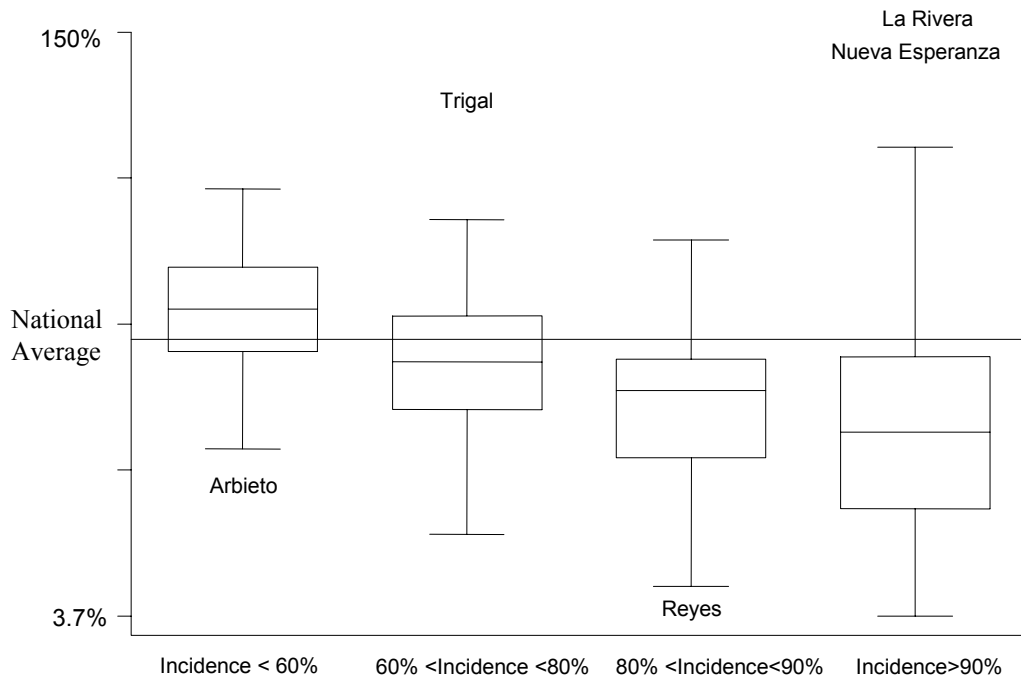
(in percent)

	<b>Mean</b>	<b>Min</b>	<b>Max</b>
Incidence < 60%	80.6	35.6	110.8
60% < Incidence < 80%	66.8	24.1	132.1
80% < Incidence < 90%	58.0	4.8	97.9
Incidence > 90%	51.3	3.7	150.0
<b>TOTAL</b>	<b>58.8</b>	<b>3.7</b>	<b>150.0</b>

Source: Estimates based on the National Census 2001 and the Ministry of Education data at municipal level.

One particular feature of the completion rate observed at municipal level is the gap between low performers and high performers. As seen on Table 1, the completion rate of the worse performer (minimum value) decreases as poverty incidence increases. In contrast, the municipality with the highest primary school completion rate holds a high fraction of poor population (more than 90%). Moreover, the gap between low performers and high performers increases as poverty incidence increases among municipalities, which rises the differences within same income groups (see Figure 11).

**Figure 11: Distribution of Primary Completion Rates across Municipal Governments**



Source: Estimates based on the National Census 2001 and the Ministry of Education data at municipal level.

The Figure above allow us to identify some municipalities with an unusual behavior. For instance, there are some municipalities that in spite of its high levels of poverty hold a high completion rate, even higher than its wealthiest counterparts (i.e., La Rivera, Nueva Esperanza, Trigal). In contrast, some municipalities with low poverty incidence levels behave as an average high-poverty-incidence municipality (i.e., Arbiesto).

*Indigenous groups concentration*

The share of indigenous population can also explain the low primary completion rates observed in some municipal governments. About 54% of the municipalities that hold a large share of indigenous population (more than 80%) exhibit a primary completion rate below 40%. In contrast, more than 65% of municipalities with a low indigenous population share behold a primary completion rate above 60% (see Table 2).

**Table 2: Primary Completion Rates according to Indigenous People Share of Total Population**

(in percent)

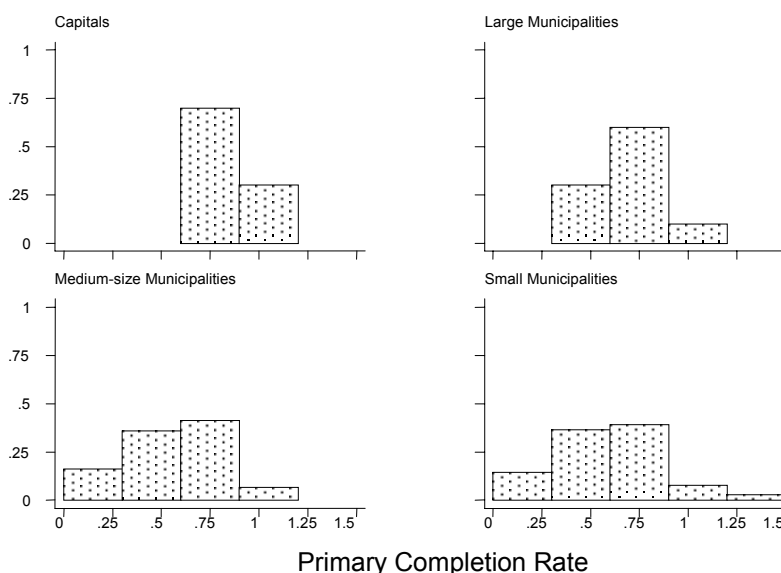
Primary Completion Rate	Share of Indigenous People			
	Pob < 10%	10% < Pob < 40%	40% < Pob < 80%	Pob > 80%
PCR < 40%	32.1	10.7	14.4	53.5
40% < PCR < 60%	21.4	22.6	29.8	22.4
60% < PCR < 80%	26.8	40.5	34.6	12.1
PCR > 80%	19.6	26.2	21.2	12.1
<b>Total</b>	100.0	100.0	100.0	100.0

Source: Estimates based on the National Census 2001 and the Ministry of Education data at municipal level.

*Size of municipal governments*

Populated municipalities, in average, present primary completion rates above 60%. Smaller municipal governments exhibit worse outcomes. The primary completion rates among those municipalities is below 60%. An important share of these municipalities (about 50%) exhibit completion rates below 40%. Singularly, the best performers can be found among the small municipalities (see Figure 12).

**Figure 12: Primary Completion Rate across Municipal Governments**



Source: Estimates based on the National Census 2001 and the Ministry of Education data at municipal level.

### *Identifying high and low performers*

High poverty incidence, high indigenous-groups concentration and high dispersion of the population, among others, are basic characteristics of municipalities with low primary school completion rates. However, there are municipal governments that in spite of its characteristics have accomplished a better or worse performance than other alike-municipalities. The country's authorities may want to visit this municipalities to learn what they are doing well or wrong ascertaining factors that seem to be associated with the differences in performance. This approach combines quantitative and qualitative analysis and may well bring to light important actions that could be undertaken in the poorly performing school districts to improve their ability to improve their performance

To identify municipalities with an unusual behavior we can use a simplified model that estimates the expected primary school completion rate given municipality's characteristics. The set of variables included in the model try to summarize socio-economic and schooling characteristics of municipalities, these are the following:

*Poverty*, summarizes poverty incidence, extreme poverty and the share indigenous population in each municipality.

*Schooling supply*, summarizes the number of primary schools per 100 children of primary school age (6-13 years), the number of classes per 50 primary students and, the number of primary school teachers per 50 primary students.

*Primary Scholl Enrollment*, the proportion of enrolled students in primary schools of children of primary school age.

*Quality of teachers* is the proportion of primary school teachers with a diploma.

*Primary Schools with 8<sup>th</sup> grade*, the proportion of schools that have 8<sup>th</sup> grade.

*Drop-out-rate*, the proportion of students that drop out of school at the 8<sup>th</sup> grade.

The following table presents the results from regressing municipal-level primary school completion rates (dependent variable) against some characteristics already identified above<sup>3</sup>.

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<sup>3</sup> The "summary" variables (*Poverty* and *Schooling Supply*) were calculated using principal components analysis, a statistical technique for data reduction.

**Table 3: Primary School Completion Rate**  
*Dependent Variable: Primary Completion Rate*

<b>Independent Variables</b>	<b>Coefficient</b>
<i>Poverty</i>	-0.0474 (-8.22)
<i>Schooling Supply</i>	0.0311 (4.85)
<i>Primary School Enrollment</i>	0.3756 (6.65)
<i>Quality of teachers</i>	0.1479 (8.87)
<i>Primary Schools with 8<sup>th</sup> grade</i>	.2378 (18.91)
<i>Drop-out rate</i>	-.3629 (-6.33)
<i>Constant</i>	.4867 (9.06)

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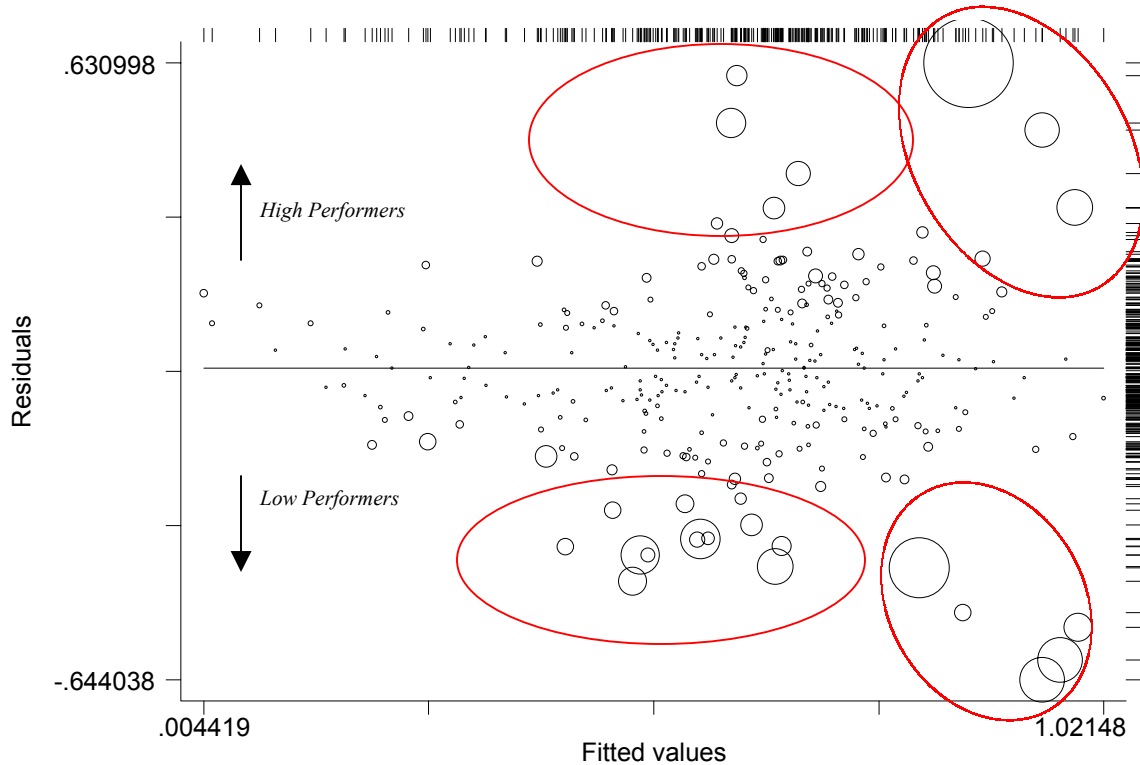
$R^2 = 0.69$

Note: t-statistics reported in parenthesis were calculated using Huber-White corrected standard errors. Standard errors were adjusted for clustering at population level. All coefficients are significant at the 10 percent level. The model excludes previously identified outliers.

These results confirm our prior findings and add some new elements to the analysis. Larger supply of school facilities (e.g., more schools, more teachers) are expected to have a positive impact over the completion rate. A higher share of qualified teachers in a given municipality improves the primary completion rate. Similarly, an increase in the share of primary schools with the 8<sup>th</sup> grade increase the primary completion rate. As a report on the World Social Situation concludes, ‘low qualification of teachers’ and ‘limited school facilities’ are factors contributing to high repetition and drop-out rates in many developing countries (United Nations, 1997). But it should be noted that there are some municipal governments that have high completion rates even though their poverty incidence levels are high, their population is mainly indigenous, their enrollment rates are low and/or present lack of appropriate staff or infrastructure. Based on the model we can identify those municipalities that, given their characteristics, have an unusual performance (better or worse than expected).

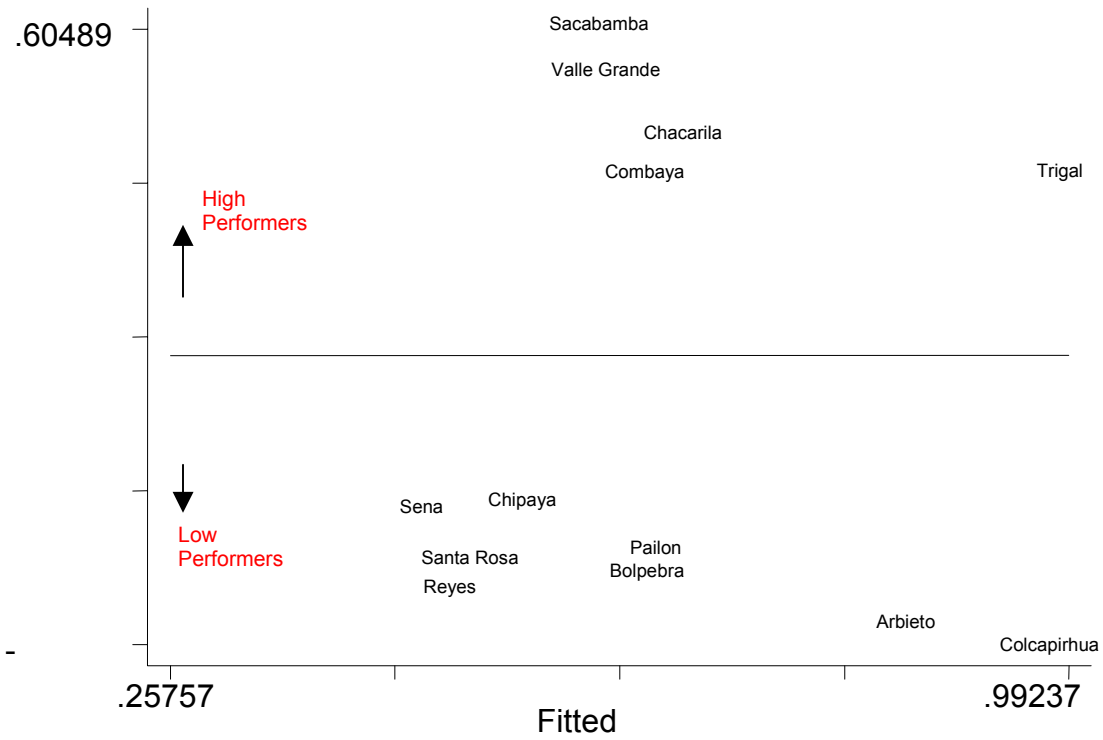
Figure 13 depicts the predicted values and the estimated residuals for the whole sample. The graph includes an horizontal line at 0 (the residual mean) and one-way scatterplots in the margins. High-performers are those municipalities which present high positive residuals and low-performers are those that present low negative residuals. A few extreme points immediately catch our eye and a few more make us pause. These unusual values have been marked with a circle. Preliminary results suggest the presence of about twenty-four unusual observations between high and low performers.

**Figure 13: Fitted Values of Primary Completion Rates against Estimated Residuals**



However, to identify more precisely the “true” outliers we used Cook’s distance indicator (Cook, 1977). This indicator tries to summarize how much a single observation influences the model as a whole. Figure 14 plots the residuals versus the fitted values of the previous model of those observations that present the highest Cook’s D values, consequently, that can be considered “outliers”. Observations of municipalities with a 15-year old population of less than 20 children were set aside. Using this criteria, 17 unusual observations have been identified of which, five can be considered high performers and the nine remaining low performers.

**Figure 14: Fitted Values of Primary Completion Rates against Estimated Residuals of municipalities with the highest Cook's distance values**



A summary of indicators for this unusual municipalities is presented below.

**Table 4: Selected Characteristics of Municipalities Identified as Low or High Performers**

Municipality	Department	Primary Completion Rate	Poverty Incidence	Extreme Poverty	Indigenous Population (%)	Gross Enrollment Rate
<i>High Performers</i>						
Valle Grande	Potosi	102.56	98.7	38.4	75.00	53.50
Combaya	La Paz	97.9	99.6	82.7	87.3	123.9
Chacarilla	La Paz	107.89	99.9	88.9	82.4	105.7
Trigal	Santa Cruz	132.08	62.7	8.5	2.8	141.1
Sacabamba	Cochabamba	121.21	98.2	58.2	84.3	85.5
<i>Low Performers</i>						
Pailon	Santa Cruz	29.0	66.4	5.3	6.1	78.9
Colcapirhua	Cochabamba	45.6	23.1	0.5	23.0	106.0
Reyes	Beni	4.84	84.3	28.7	3.0	112.0
Bolpebra	Pando	24.0	95.5	40.3	7.5	105.4
Sena	Pando	17.3	96.1	54.6	1.3	104.7
Arbieto	Cochabamba	35.6	54.4	7.9	70.8	117.3
Santa Rosa del Abuna	Pando	11.1	88.7	58.8	1.6	53.5
Chipaya	Oruro	26.8	99.3	82.7	87.3	99.0

### **III. Concluding remarks**

It is evident that after eight years of the implementation of the Education Reform Program, there have been important improvements in many education indicators. By 2001, the illiteracy rate decreased to 13.3 percent from 20 percent in 1992. In rural areas, 25.8 percent of the population is illiterate (nearly 11 percentage points lower) and in urban areas only 6.9 percent is illiterate. The youth literacy rate is now three percentage points above the average of the Latin America and the Caribbean region, which reaches 94.1 percent. As for enrollment, the gross coverage of primary education stood at 108.4 percent while the net coverage ratio increased to 97 percent for both girls and boys suggesting that Bolivia is very close to achieving equal educational opportunities. However, huge disparities in access remain across different income groups, ethnic groups and among municipalities from different areas of the country.

The analysis carried out found that at early stages of schooling all children attend to school (rich and poor, indigenous and non-indigenous, urban and rural), however, this picture changes when children become 11 years old. As the opportunity cost of sending children to school increases, children from low-income families or indigenous groups start leaving school. At the age of eleven, financial constraints shift poor and indigenous children from school to the informal labor market, to unpaid agricultural labor or to home-related activities. At the age of 15, about ten thousand children work of which 45% belong to the lowest-income quintile. In contrast, non 15-year old wealthy kid left school because of financial problems.

Supply side factors, as well, drive parents to take their children out of school. Most of low-income children attend public schools which generally present poor education quality. High-income children can avoid this by attending private schools where the outcomes are better. However, low-income children do not only face low education quality but also lack of teachers. Around 5,500 children don't attend school because they don't have a teacher in their school, in contrast to wealthy children that never face this constraint. In rural areas, children not only face the lack of teachers but also the lack of schools. Around 24,000 children don't attend school because the nearest school is too far.

Clearly, more children begin school than they finish particularly those that belong to poor households or indigenous families. In consequence, schooling levels attained vary significantly when observing certain individual characteristics. While most high-income children finish primary school, only 19% of the 15-year old children from low-income families do. Similar conclusions can be reached when observing data for children from indigenous groups. Children coming from indigenous households have a lower educational attainment compared to their non-indigenous counterparts.

In contrast to many low-income countries, patterns do not vary significantly between gender. The analysis suggests that due to insignificant gender gaps parents do not make different educational decisions or choices based only on student's gender. These result is quite interesting given the importance of gender disparities and its relevance on the

attainment of primary education gender equity. It can be concluded that Bolivia is close to achieving equal educational opportunity for girls and boys.

Similar disparities are evident when observing data at municipal level. High poverty incidence, high indigenous-groups concentration and high dispersion of the population, are basic characteristics of municipalities with low primary school completion rates. Additionally, large supply of school facilities, high share of qualified teachers coupled with better education quality have a positive effect over the primary completion rates observed in municipalities. However, there some municipalities that in spite of its high levels of poverty, high concentration of indigenous people, low enrollment rates and lack of appropriate staff or infrastructure exhibit an unusual good performance. This methodology allows us to identify municipalities that are high performers and low performers. The country's authorities may want to visit this municipalities to learn what they are doing well or wrong ascertaining factors that seem to be associated with the differences in performance. This approach combines quantitative and qualitative analysis and may well bring to light important actions that could be undertaken in the poorly performing school districts to improve their ability to improve their performance (Newman, 2002).

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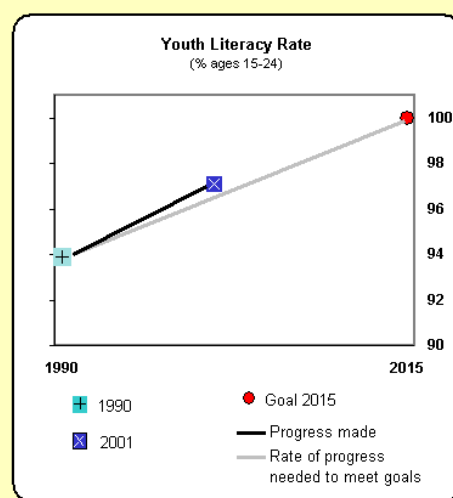
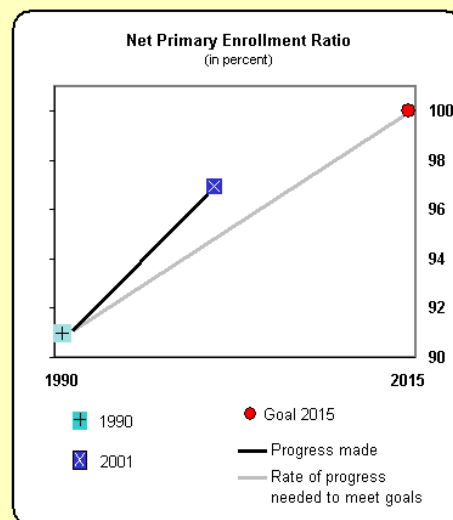
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## Annex 1. Bolivia: Key Education Indicators

	Latest single year			Same region/income group	
	early 1990s	mid-1990s	2001	Latin America & Carib.	Lower-middle-income
Illiteracy Rate (%)	20.0	16.6	13.3	12.0	15.9
Youth literacy rate (% ages 15-24)	93.9	...	97.1	94.1	85.2
Average years of school (pop. 19 years and older)	4.4	...	7.5	6.0	6.2
Male	...	...	8.4	...	...
Female	...	...	6.7	...	...
Gross Enrollment Rate					
Total	69.8	77.6	88.4	...	...
Pre-school	31.5	36.9	48.6	...	...
Primary	94.5	103.3	108.4	113.4	106.6
Secondary	38.0	45.3	66.8	71.9	71.1
Net Enrollment Rate					
Total	...	...	76.1	...	...
Pre-school	...	...	38.3	...	...
Primary	91.0	...	97.0	93.9	89.8
Secondary	...	...	51.1	58.0	...
Girls as % of total enrolled, primary	47.2	48.0	48.5	48.7	48.0
Girls as % of total enrolled, secondary	...	46.4	47.4	51.5	45.5
Net Primary Enrollment Rate					
Male	...	...	97.2	...	...
Female	...	...	96.7	...	...
Drop-out rate (public schools)					
Primary school	6.2	8.2	5.9	...	...
Secondary school	10.1	11.6	6.7	...	...
Sixth grade promotion rate (public schools)					
National	52.8	77.3	84.7	...	...
Urban	...	77.2	85.3	...	...
Rural	...	77.5	83.7	...	...
Repeaters as % of total enrolled, primary	...	7.1	3.8	14.1	2.5
Repeaters as % of total enrolled, secondary	...	10.6	8.6	...	...
<b>Public Expenditure on Education<sup>(a)</sup></b>					
as % of GDP	2.4	3.5	5.6	...	...
as % of Total Public Expenditure	6.9	10.4	23.7	...	...
<b>Human Resources (public schools)</b>					
Students enrolled in public primary school	1,140,477	1,428,713	1,666,153	...	...
Students enrolled in public schools	1,415,616	1,812,620	2,263,158	...	...
Number of teachers	...	80,678	91,782	...	...
Number of primary school teachers	...	61,828	70,177	...	...
Number of primary school teachers w/o a diploma	...	31,881	33,665	...	...
Pupil/teacher ratio in primary school	15.0	25.5	25.1	26.4	21.1
<b>Physical Resources (public schools)</b>					
Number of educational buildings	...	12,041	14,758	...	...
Educational buildings with electricity (% of total)	20.0	...	38.1	...	...
Educational buildings with water hook-up (% of total)	9.0	...	19.7	...	...



Source: Information System on Education (SIE), National Census of Population and Housing 2001, various Household Surveys and World Bank education statistics.  
(a) Excludes expenditures on tertiary education (Universities).