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**Economic and  
Sector Study Series**

**THE EDUCATION SECTOR  
IN THE DOMINICAN REPUBLIC:  
OVERACHIEVEMENTS AND  
UNDERPERFORMANCE**

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## PREFACE

Education is one of the core factors behind poverty and high-income inequality in the Dominican Republic (DR) and increasing secondary and tertiary education completion is paramount for a poor Dominican family to escape poverty and to reduce earning differentials in urban areas. This study analyzes the challenges the DR faces to increase educational levels, particularly of the poor, making the case that, in the regional context, the DR's educational system is simultaneously an overachiever in education enrollment and an underperformer in attainments. Almost no enrollment differences are observed between males and females, between rural and urban areas, while those between richer and poorer children are small relative to those seen elsewhere in the region. Where things fall apart is in turning this attendance record into years of schooling, a very rough first-pass measure of skills. The main reason for this divergent performance (high enrollment but very low attainment) is high repetition rates. Repetition significantly increases inequity in terms of years of schooling thus eroding the equity gains in enrollment. By this measure, girls, urban residents, and high-income children obtain significantly higher skills than the corresponding comparison groups. The DR's main challenge is to understand and address the causes of repetition and weak progression. This will most likely require a host of interventions to improve equity of access to good-quality education both in rural and urban marginal areas and to ease supply bottlenecks in the second cycle of primary education in rural areas and in secondary education in both urban and rural areas. This will require a sustainable increase in both the level and efficiency of public expenditures on primary and, even more, on secondary education.

This paper has made significant use of the analysis presented in "The Dominican Republic: Educational Overachiever and Underperformer" (Ripani and Urquiola, 2005). Special thanks to Omar Arias, Sam Carlson (peer reviewer), Emanuela di Gropello (peer reviewer), Carlos Eduardo Velez-Echavarría (peer reviewer) for detailed comments to an earlier version of this work. The authors also thank Héctor Salazar-Sánchez, Division Chief (RE2/SO2) and Manuel R. Agosin, Consultant (RE2/RE2) for their guidance. Additionally, they thank Mariana Williman (RE2/SO2) and Miriam Pérez-Fuentes (RE2/RE2) for their support in the production of this document.

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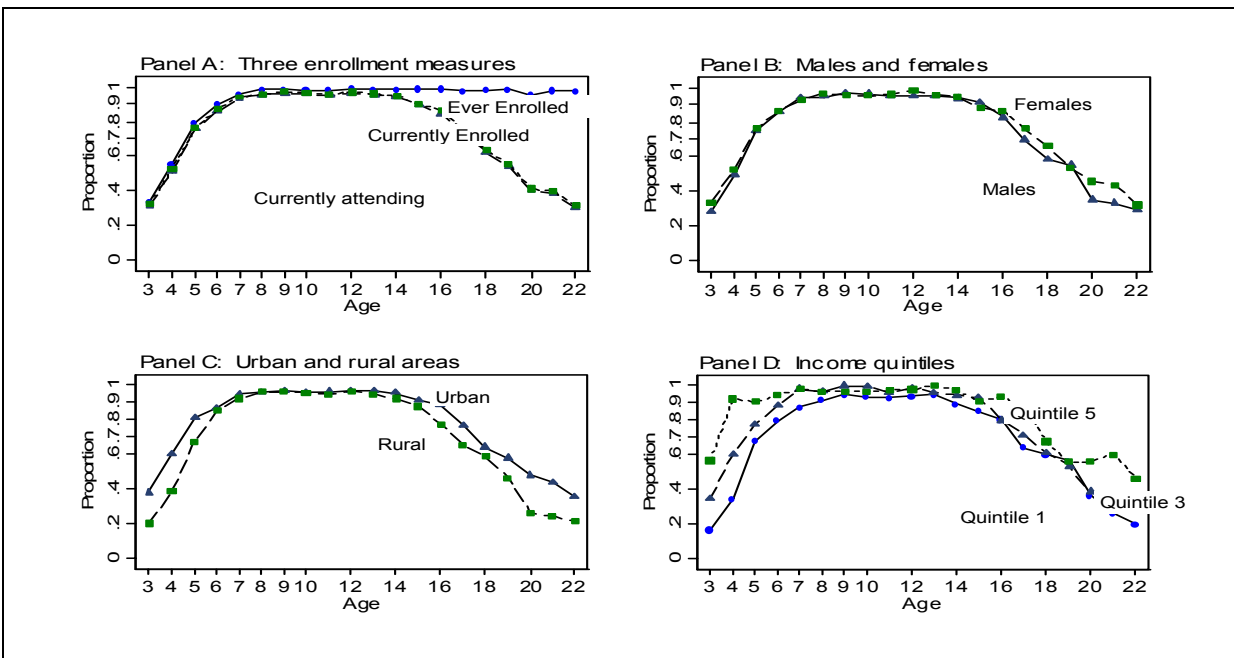
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## I. THE DOMINICAN REPUBLIC: RELATIVE OVERACHIEVER IN SCHOOL ENROLLMENT

*The DR does quite well in enrolling and keeping children in school until they are 16-17 years old.* Despite supply bottlenecks and low educational quality, enrollment rates in the Dominican Republic (DR) reach relatively high levels. Panel A in Figure I-1 presents three different enrollment measures calculated using the 2004 Living Standard Measurement Survey (*Encuesta Nacional de Condiciones de Vida, ENCOVI*). The top line describes the proportion of respondents who state that they ever enrolled in an educational institution.<sup>1</sup> This reveals that by age 8, about 98 percent of children in the DR have had some contact with the educational system. The second segment in Panel A depicts the proportion of individuals who state further that they are currently enrolled in school,<sup>2</sup> and the third counts as enrolled only those who are currently attending classes.<sup>3</sup> These turn out to be quite similar, hence this study will rely on the latter, most stringent, criterion to measure enrollment (for instance, in the remaining panels of Figure I-1).

Finally, Panels B-D plot age-specific enrollment for children according to gender, area of residence and family income group (the 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> quintile of the income distribution, the 1<sup>st</sup> and 5<sup>th</sup> being the 20% poorest and richest, respectively).

**Figure I-1**  
**Age-Specific Enrollment in the Dominican Republic, 2004**



Source: Ripani and Urquiola (2005) using the 2004 ENCOVI.

- <sup>1</sup> The precise question is, “Have you ever attended school?” (“¿Alguna vez asistió a la escuela?”).
- <sup>2</sup> The precise question is “Have you registered at a school or university for this academic year?” (“¿Se inscribió o matriculó en la escuela, colegio, o universidad en este año escolar/período académico?”).
- <sup>3</sup> The precise question is “Are you currently attending classes at a school or university?” (“¿Está asistiendo actualmente a la escuela, colegio, o universidad?”).

Figure I-1 highlights several salient facts about school access in the DR. First, while Panel A shows that in the 8-13 age range there is close to universal enrollment, it presents prima facie evidence of delayed entry problems, since enrollment rates are below 90 percent for ages six and seven.<sup>4</sup> Second, as elsewhere in the LAC region, enrollment rates begin to fall at about age 13, as children drop out of the educational system. Third, the gaps in enrollment between relevant groups are relatively small. Panel B shows that enrollment rates are fairly similar between boys and girls, if anything they favor females although the differences are not statistically significant.<sup>5</sup> Panel C also highlights that enrollment rates are lower in rural areas, although less dramatically than elsewhere in LAC. Finally, Panel D shows relatively minor differences in the enrollment profiles across income groups between ages 8 and 14. Higher income children do enroll in some type of pre-school (ages three to five) at a significantly higher rate and they also stay in school somewhat longer, but again the differences are not dramatic vis-à-vis elsewhere in the region. In sum, enrollment in the DR is not only relatively high, but also differences between relevant groups (except between income groups in certain age ranges) are relatively small.

Tables I-1 and I-2 present a measure of average years in school to place the DR's enrollment levels in a regional context. This indicator captures the expected or average number of years that an individual will spend in school by a given age, given the enrollment patterns currently observed in the country (Urquiola and Calderon (2004)). It provides a convenient summary of the resources (if only in time) spent by the State and households to keep children in school. It is obtained by cumulatively adding age-specific net enrollment rates like those in Figure I-1. For example, by the time they are six years old, Dominican children have spent 0.86 years in school and by age 15 would have spent an average of 9.4 years in school.<sup>6</sup>

Table I-2 uses this measure to compare the DR to other countries in the LAC region, based on the average years in school children have accumulated in the "1-12" system by the time they are 18 years old. The data reveals that in terms of keeping children in school, the DR outperforms most countries in the region, except only for much higher income and lower demographic growth countries like Chile and Argentina. Thus, despite the quality deficiencies we review below, educational demand is unusually high in the DR.

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<sup>4</sup> As in other LAC countries, the normative entry age is six in the DR but this is not enforced.

<sup>5</sup> These results are based on samples of households and thus have associated estimation errors.

<sup>6</sup> Note that the years of schooling series do not need to begin at one, particularly if surveys are taken during the school year, as it is the case of the 2004 ENCOVI.

The DR's high educational demand in a regional context

**Table I - 1**  
Enrollment and Average Years in School, 2004

Age	Age-specific Net Enrollment Rate (1)	Average Years in School (2)
6	0.86	0.86
7	0.93	1.79
8	0.95	2.74
9	0.97	3.71
10	0.96	4.67
11	0.95	5.63
12	0.96	6.59
13	0.96	7.55
14	0.93	8.49
15	0.88	9.37
16	0.83	10.2
17	0.71	10.9
18	0.61	11.5

Column 2 cumulates the entries in Column 1. For example, by the time they are six years old, Dominican children have spent 0.86 years in school, by age seven they have spent 1.79 (0.86 + 0.93) years in school. Since this expectation is taken from a single household survey, it incorporates the behavior of older children cohorts. A child who begins school today might eventually display a different trajectory if the DR's educational system suddenly improved.

Source: Ripani and Urquiola (2005) using the 2004 ENCOVI.

**Table I - 2**  
Ranking by Average Years in School, Circa 2000

Country	Average years in school by age 18
Argentina	12.1
Chile	12.1
<b>Dominican Republic</b>	11.8
Jamaica	11.7
Panama	11.5
Brazil	11.4
Uruguay	11.4
Bolivia	11.2
Peru	11.1
Venezuela	11.0
Paraguay	10.7
Mexico	10.6
Belize	10.6
Colombia	10.5
Costa Rica	10.5
Ecuador	10.4
El Salvador	10.0
Nicaragua	9.7
Haiti	8.8
Honduras	8.6
Guatemala	8.2

Source: Urquiola and Calderón (2004).

The demand for education is particularly high in the 13-18 age range. To provide some insight on where exactly the DR's advantage originates, Table I-3 presents age-specific enrollment rates of a large sample of countries in LAC. The DR's good performance does not emerge from particularly high enrollment in the 8-12 age range, in which most countries achieve their highest enrollment. The DR's advantage comes rather from its unusually high enrollment in the early and later age ranges (13-18). Only six countries in the list have higher enrollment at age six; by age 18 the DR outperforms all countries but Bolivia. Thus, dropout problems in the DR are notably less severe than elsewhere in the region. This still leaves the possibility open for inadequate supply at the primary and secondary level, an issue we return to below.

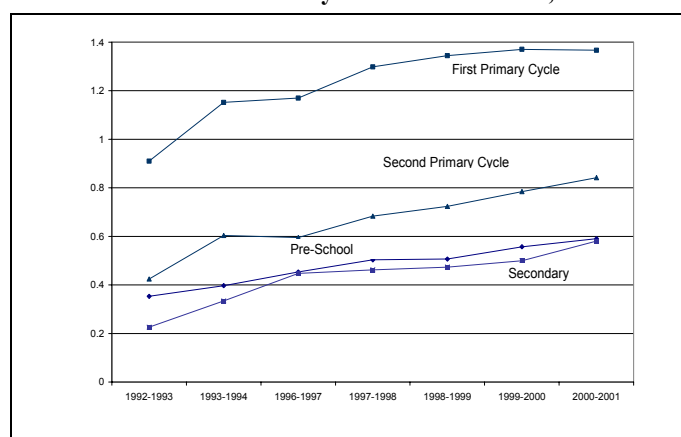
**Table I - 3**  
**Age-Specific Net Enrollment Rates in Selected Countries, Circa 2000**

Country	Ages												
	6	7	8	9	10	11	12	13	14	15	16	17	18
Belize	0.92	0.97	0.99	1.00	0.99	0.99	0.98	0.93	0.77	0.65	0.57	0.48	0.35
Bolivia	0.79	0.96	0.98	0.98	0.97	0.96	0.91	0.91	0.85	0.80	0.77	0.71	0.65
Brazil	0.82	0.94	0.97	0.98	0.97	0.98	0.97	0.94	0.91	0.86	0.79	0.71	0.59
Chile	0.88	0.99	0.99	0.99	0.99	0.99	0.99	0.98	0.97	0.94	0.89	0.84	0.66
Colombia	0.86	0.92	0.93	0.95	0.93	0.94	0.90	0.84	0.81	0.74	0.69	0.55	0.42
C. Rica	0.89	0.98	0.97	0.98	0.97	0.98	0.92	0.85	0.74	0.65	0.57	0.52	0.44
<b>DR</b>	0.91	0.94	0.96	0.97	0.99	0.97	0.98	0.99	0.95	0.91	0.85	0.78	0.65
Ecuador	0.91	0.94	0.95	0.96	0.95	0.89	0.88	0.80	0.73	0.67	0.66	0.59	0.45
El Salv.	0.67	0.84	0.89	0.93	0.91	0.91	0.89	0.85	0.77	0.72	0.63	0.52	0.42
Guatemala	0.65	0.71	0.83	0.86	0.86	0.85	0.83	0.74	0.60	0.47	0.39	0.36	0.28
Honduras	0.57	0.83	0.90	0.91	0.92	0.89	0.82	0.68	0.55	0.47	0.39	0.37	0.27
Jamaica	1.00	1.00	1.00	0.99	1.00	1.00	0.99	0.98	0.99	0.93	0.83	0.62	0.36
Mexico	0.94	0.97	0.98	0.98	0.97	0.97	0.94	0.88	0.84	0.65	0.63	0.47	0.41
Nicaragua	0.63	0.84	0.86	0.92	0.90	0.89	0.88	0.85	0.76	0.72	0.55	0.49	0.39
Panama	0.92	0.98	0.99	0.99	0.99	0.99	0.96	0.92	0.91	0.82	0.75	0.69	0.55
Paraguay	0.87	0.91	0.98	0.97	0.97	0.98	0.93	0.88	0.81	0.71	0.64	0.58	0.48
Peru	0.93	0.98	0.97	0.97	0.99	0.98	0.96	0.94	0.85	0.81	0.75	0.56	0.47
Venezuela	0.93	0.96	0.98	0.97	0.97	0.97	0.96	0.93	0.88	0.79	0.68	0.54	0.45

Source: Urquiola and Calderón (2004).

*The DR's good enrollment performance reflects sustained improvement over the 1990s and the fact that this was not significantly affected by the 2002-2004 crisis.*<sup>7</sup> Figure I-2 show gross enrollment rates for pre-school and the two cycles of primary (grades 1-4 and 5-8), and secondary. For both the primary and secondary cycles, gross enrollment increased by more than 40 percentage points over ten years, a remarkable progress. For pre-school, the improvement has been half as large even if relative to a lower base.

**Figure I - 2**  
**Gross Enrollment Rates by Educational Level, 1992-2001**



Source: Based on administrative data from Álvarez (2004).

<sup>7</sup> For a thorough discussion of the evolution and characteristics of the DR educational system see Álvarez (2004).



A question that arises is whether the 2002-2004 economic crisis might have reversed some of this progress. Although we lack the data to determine the relevant counterfactual, i.e., the trajectory that enrollment would have followed in the absence of the crisis, the data suggests that it did not have a major impact. Table I - 4 shows that even by the beginning of this period, enrollment was already relatively high in the DR and continued to increase for most age ranges through 2004, although the changes are generally small. An exception concerns age 17 where enrollment fell by 6 points while at age five enrollment increased by four points during that period. These results also hold when separating by family income quintiles.

**Table I – 4**  
**Age-Specific Net Enrollment Rates using the ENFT Surveys, 2000-2004**

Age	Net Enrollment Rates				
	2000	2001	2002	2003	2004
4	0.41	0.48	0.56	0.57	0.58
5	0.66	0.67	0.77	0.76	0.81
6	0.91	0.92	0.91	0.92	0.94
7	0.94	0.96	0.96	0.95	0.95
8	0.96	0.96	0.97	0.96	0.97
9	0.97	0.96	0.98	0.98	0.99
10	0.99	0.99	0.98	0.97	0.99
11	0.97	0.98	0.98	0.98	0.99
12	0.98	0.98	0.98	0.99	0.98
13	0.98	0.98	0.95	0.97	0.97
14	0.95	0.96	0.94	0.96	0.97
15	0.91	0.93	0.91	0.92	0.93
16	0.86	0.83	0.85	0.85	0.86
17	0.76	0.77	0.79	0.78	0.73
18	0.65	0.60	0.63	0.62	0.64

*Source:* Ripani and Urquiola (2005) using the National Labor Force Surveys (*Encuesta Nacional de Fuerza de Trabajo, ENFT*) for 2000-2004 (October waves).

Overall the data indicates that the economic crisis did not have a major impact on enrollment. It might have reduced the rate of progress relative to what it would have been otherwise, but not to the extent to reverse earlier gains. This is not surprising since the direction of the expected impact is not clear. On the one hand, negative income shocks might lead some households to withdraw their children from school due to credit constraints. On the other hand, as work opportunities outside school diminish, children tend to remain enrolled. Evidence from the region points to similar conclusions.<sup>8</sup>

To summarize, the DR does a relatively good job in getting and keeping children in school. There are no major differences between males and females, and between urban and rural residents. Differences between income groups are significant in certain age ranges, but do not stand out in the regional context. Finally, the economic crisis in 2002-2004 does not seem to have affected enrollment significantly. In these aspects, the DR's educational system is a relative overachiever on school enrollment in the regional context.

<sup>8</sup> For instance, Boivin, Deschenes and Schady (2002) find that an arguably deeper recession in Peru did not affect attendance rates.

**A. Which factors are behind the high demand for education?**

A first explanation for the high enrollment rates observed in the DR, especially in the age range 13-18, could come from different factors (Inter-American Development Bank and World Bank, 2006, Chapter 3). On the one hand, low returns to primary and secondary education may represent a disincentive to continue studying and therefore depress demand for education. On the other hand, high returns to tertiary education coupled with high unemployment rates among individuals without complete secondary education and youth (new entrants in the labor market), might represent an incentive for young people to stay in the educational system hoping, one day, to complete secondary and access tertiary education. Unfortunately, the DR educational system, as explained below, is rather inefficient in turning years spent in school in years of schooling.

International remittances, by reducing households' credit constraints, might represent another factor that could be driving up the demand for education. Recent evidence from El Salvador (Cox and Ureta, 2003) supports this hypothesis. In the case of the DR, to explore the determinants of demand for education, Arias and Ripani (2005) replicate the exercise of including remittances in a survival model using the 2004 ENCOVI. From their analysis, a higher level of international remittances received at the household-level appears to be positively correlated with lower probability of dropping out of school. Additionally, the interaction between remittances and proximity to a paved road (a proxy, albeit imperfect, of access to basic services such as schools) is negative, indicating that remittances may partially compensate for access constraints (for example by covering transportation costs). This correlation, though, is statistically significant only for urban areas.

Additionally, Table AI - 2. in Annex I shows that the correlation between not having a birth certificate and the likelihood of dropping out of school is positive and very high in the national sample, and it remains statistically significant for both the rural and urban samples, with a greater correlation observed for urban areas. Given that the State Secretariat of Education (*Secretaría de Estado de Educación*, SEE) allows children without a birth certificate to enroll in up to the 6<sup>th</sup> grade, these results might be suggesting either the lack of or imperfect information on SEE policies on behalf of families with undocumented children or weak enforcement of these policies, by for example, school directors. With full information and enforcement of the SEE policy on undocumented children the correlation between being undocumented and higher likelihood of dropping out should be very low, at least up to grade 6<sup>th</sup>. One should also notice, that the results might be driven, in part, by the fact that the lack of birth certificates can be proxying for other unobserved variables which might be correlated with school progression. The SEE is currently exploring the possibility of extending the "waiver" now in place for the first six grades of primary to the 8<sup>th</sup> grade. Given the importance of improving progression rates for children of the poorest households in order to break the intergenerational transmission of poverty, the rule allowing enrollment without birth certificate should be widely publicized and enforced.

## II. THE DOMINICAN REPUBLIC: RELATIVE UNDERPERFORMER ON SCHOOL ATTAINMENTS

*High demand for education does not turn into high schooling attainment due to high repetition, which leads to high inequality in attainment.* The DR educational system is, however, a notable underperformer in turning children’s contact with the system into years of schooling, a first-pass measure of skills. Table II - 1 begins to illustrate this by comparing the average years of schooling at different ages (e.g., the actual number of grades that survey respondents on average say they have completed) with the age-specific average years in school of Table I - 1 (considering only the “1-12” educational system). Figure 3 (Panel A) plots these data together with the maximum years of school that a child of a given age could have if she started at age six and had a “normal” progression through the educational system (top segment 45 degrees lines). For example, this child could have completed two years of schooling by age 7 and up to twelve years by age 17. These comparisons give an indication of how effectively the DR educational system turns average years in school into average years of schooling.

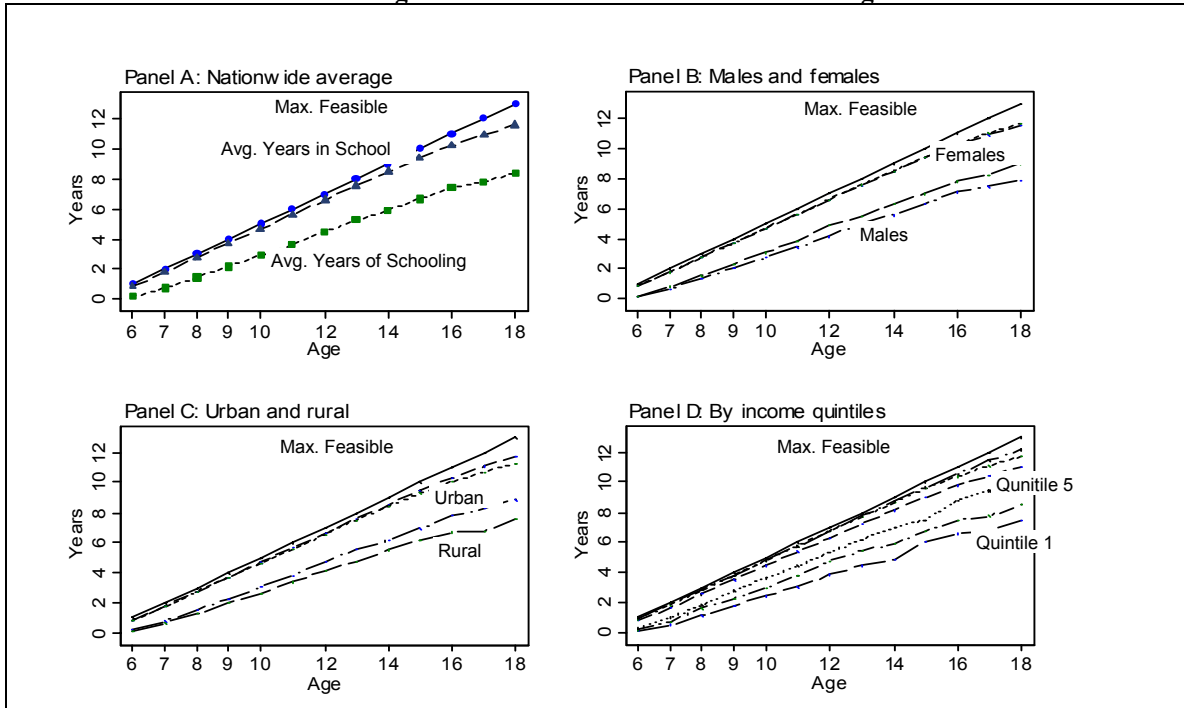
**Table II – 1**  
**Average Years in School and Average Years of Schooling**

Age	Average years in school (1)	Average years of schooling (2)
6	0.86	0.16
7	1.79	0.72
8	2.75	1.45
9	3.71	2.17
10	4.67	2.90
11	5.62	3.66
12	6.59	4.49
13	7.55	5.25
14	8.49	5.92
15	9.38	6.66
16	10.2	7.42
17	11.0	7.83
18	11.5	8.41

*Source:* Ripani and Urquiola (2005) based on the 2004 ENCOVI

Why doesn’t every 18 year old in the DR achieve 12 years of schooling?. Panel A of Figure II - 1 makes it clear that this is due to two distinct problems: the lack of universal attendance (the gap between the first and the second segment), and the failure to turn years in school into completed years of schooling (the gap between the second and the third segment). From age 6 to 11 the gap between maximum school attainment and average years spent in school is relatively small (due to slight delayed entry) but by age 12 the two series diverge more markedly as dropout rates increase. The divergence is more marked when considering actual years of completed education, which reflects the failure of the system to turn years in school into grade completion. For instance, while by age nine Dominican children have spent an average of 3.71 years in school, they on average have attained only 2.17 years of schooling, which by age 18 become 11.5 and 8.41, respectively. As explained below, the results offer prima facie evidence of substantial repetition problems.

**Figure II – 1**  
**Average Years in School and Years of Schooling**



*Notes:* In Panels B, C, and D, the segments closest to the “maximum feasible” plot the average years in school observed among individuals of each group. The bottom segments (between which there is always greater distance) plot the average years of schooling measures.

*Source:* Ripani and Urquiola (2005) based on the 2004 ENCOVI.

### A. What accounts for low school attainments?

The educational system’s failure to turn years spent in school into years of schooling results in inequality in school attainment. The top segments in Panels B, C, and D in Figure II-1 show that when one looks at average completed years of schooling the differences between salient groups (e.g., males and females, urban and rural dwellers, and rich and poor) become much greater. Females begin to outperform males significantly, particularly after age 16; the urban zones do somewhat better than rural areas; and a substantial gap equal to more than three years of schooling emerges between the poorest and richest families. This pattern of inequality in school attainments between urban and rural areas, and between income quintiles is also observed in Central American countries. In contrast, the female advantage over males in educational attainments is an aspect that the DR shares with other Caribbean countries (World Bank, 2004b).

Table II- 2 shows that, in terms of the size of the years in school-grades completed gap, the DR is one of the worst performers in the region. It ranks below only Brazil, Belize and Nicaragua. The end result is that from being top 3rd ranked in keeping children in school (Table I - 2) the DR drops dramatically to the 13th position in a ranking of average completed years of schooling. Although the DR has a better record of average

years of schooling completed, it underperforms in transforming years in school into grades completed.

Another way of seeing that high demand for education does not turn into high school attainments is by comparing survival functions by age and grade completed (Figures AI-1 and AI-2 -Annex I). In the DR, dropout rates become more serious around the age of 16-17, much later than in Central American countries where it worsens around age 13. In terms of grades completed, drop out problems in the DR become more significant in grades 7 and 8, much earlier than the grades that should ideally correspond to age 16-17. Just above 70 percent of Dominican children reach grade 9, a percentage similar to El Salvador where nevertheless children stay on average a much lower number of years in the education system (World Bank, 2004b).

Taken together, the above results suggest that while the DR has been quite successful at raising enrollment and reducing inequality in access to schooling, its educational system displays relatively severe problems in turning students' contact with it into years of schooling. Further, this failure is an important source of educational inequality in so far as the performance is worse for boys, rural residents, and the poor.

**Table II - 2**  
**Ranking by Average Years of Schooling Accumulated in the Formal "1-12" Educational System and excess years spent in school, Circa 2000**

Country	Average years of schooling completed	Average excess years spent in school
Chile	10.4	1.7
Argentina	9.8	2.3
Panama	9.5	2.0
Peru	9.0	2.1
Bolivia	8.9	2.3
Jamaica	8.8	2.9
Ecuador	8.7	1.7
Mexico	8.7	1.9
Uruguay	8.7	2.7
Venezuela	8.6	2.4
Colombia	8.4	2.1
Paraguay	8.4	2.3
<b>Dominican Republic</b>	8.3	3.5
El Salvador	8.0	2.0
Costa Rica	7.8	2.7
Brazil	7.3	4.1
Belize	6.6	4.0
Honduras	6.2	2.4
Haiti	5.9	2.9
Nicaragua	5.9	3.8
Guatemala	5.5	2.7

Source: Based on Urquiola and Calderón (2004).

## **B. Why the divergence between educational demand and grade completion?**

The previous sections make it clear that, relative to the LAC region, the DR's educational system is an overachiever in some respects, and a real under-performer in others. This section discusses some possible reasons for this divergent performance.

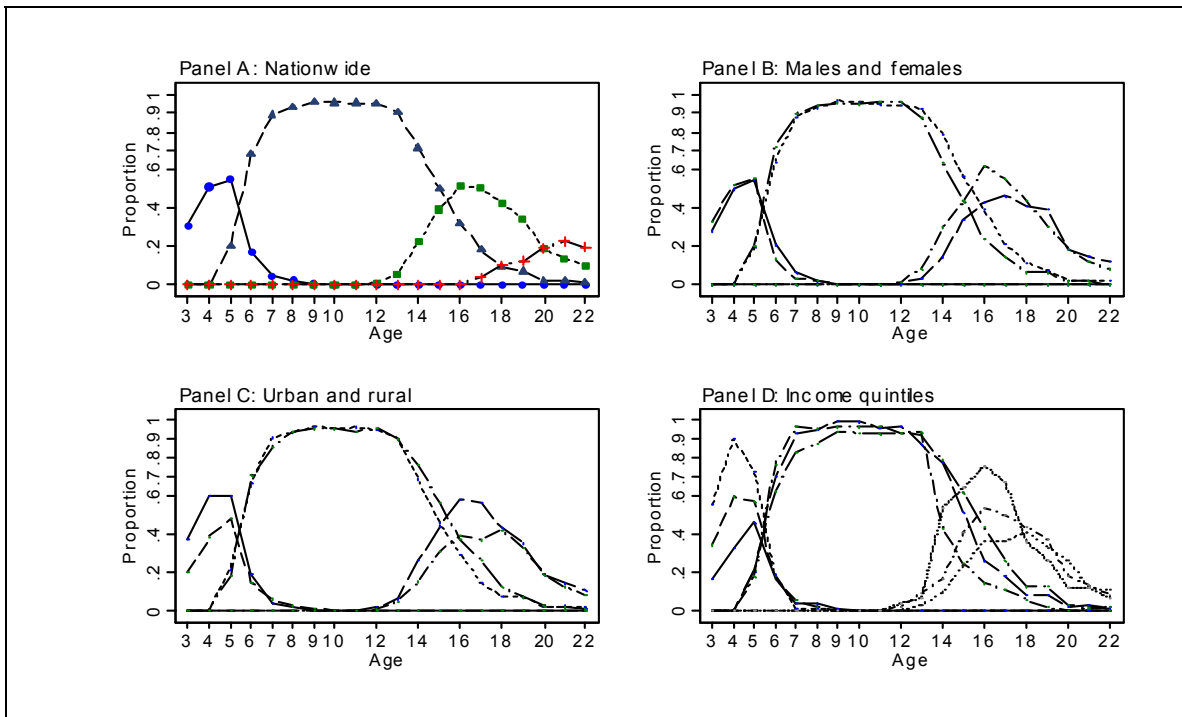
**The role of late entry: Does Pre-Schooling Crowd Out Primary Schooling?** A first explanation for the divergent performance is that while the DR does very well in generating early enrollment, this enrollment is not necessarily in school. Table II-3 first summarizes the structure of the Dominican educational sector. Children are supposed to begin the first cycle of primary education at age six. Prior to that, they can enroll in non-compulsory pre-schooling of different types.

**Table II - 3**  
**Structure of the Educational Sector**

Level	Cycles	Grades and ages			
		1 <sup>st</sup> -4 <sup>th</sup> grade	5 <sup>th</sup> -8 <sup>th</sup> grade	9 <sup>th</sup> -10 <sup>th</sup> grade	11 <sup>th</sup> -12 <sup>th</sup> grade
Primary	1 <sup>st</sup>	Age 6-9			
	2 <sup>nd</sup>		Ages 10-14		
Secondary	1 <sup>st</sup>			Ages 15-16	
	2 <sup>nd</sup>				Ages 17-18

Figure II-2 presents age-specific enrollment rates for children aged 3 to 22, according to the educational level they are expected to attend at their age nationwide and by gender, area and family income level. As expected, a first finding in Panel A is that pre-school enrollment is fairly high—about 50 percent of four and five year olds attend some type of pre-school. A further finding, however, is that pre-school enrollment to some extent crowds out primary attendance. Specifically, among individuals aged six, who should be attending school according to the norm, 20 percent are still in pre-school.

**Figure II - 2**  
**Age-Specific Net Enrollment Rates**



Source: Ripani and Urquiola (2005) using the 2004 ENCOVI.

Thus, data like that in Figure I-1, by recording all attendance regardless of the education level children are expected to attend, implicitly overstates enrollment.

The policy implications this finding raises are subtle. On the one hand, pre-school may be valuable to children, giving them the skills needed to succeed in school and later. On the other hand, if pre-school attendance causes some children to enter school late and those same children exit early, then it may lower attainment unless pre-school is truly high quality.

In any case, this “crowding out” effect is certainly not the main reason the DR lags in turning attendance into years of schooling. However it might be worthwhile to study more carefully the interaction between the pre-school sector, some of which is publicly funded, and the initial cycle of primary, examining the guidelines that govern the transfer between the two levels such as the normative ages and the degree of enforcement of these policies.

Panels B-D in Figure II - 2 present similar profiles for females and males, urban and rural areas, and between income quintiles. First, the differences between males and females in average years in school (Figure II - 1) are not due to differences in pre-school or primary enrollment—up to about age 12 the two enrollment profiles are virtually identical. The differences emerge because females attend secondary school at a higher rate than males do. Urban-rural differences, in contrast, are observed both for pre-school and secondary attendance. In both cases however, the gaps displayed are not large. In contrast, more substantial differences are observed both in pre-school and secondary between quintiles 5 and 1.

### **C. Dealing with repetition: the need to understand better its causes.**

As previewed above, the key reason for the DR’s divergent performance is repetition, which is seen in the fact that children spend much time in school but make progress only very slowly through different grades. Table II-4 presents more direct evidence on this: rates of on-time progression to the next grade in different countries, showing that the DR is one of the worst performers in the region together with Guatemala and Ecuador.<sup>9</sup> Average estimated repetition rates for the first three grades are 12.4 and 7.7 percent in rural and urban areas respectively. Repetition rates decrease in grades 4<sup>th</sup> through 8<sup>th</sup> but stay above 8 percent nation-wide. Repetition picks up again in 9<sup>th</sup> grade, reaching almost 20 percent nation-wide and 28 percent in urban areas.

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<sup>9</sup> The estimation of on-time progression rates is carried out by Cabrol (2002) using the Klein’s methodology, which corrects for underestimation of repetition rates obtained through the UNESCO model.

**Table II - 4**  
**Percentage of students progressing on time**

Country	School year	Grade								
		1	2	3	4	5	6	7	8	9
Argentina	98-99	99	97	95	93	90	87	80	70	
Brazil	98-99	98	95	89	83	75	69	64	59	54
Chile	97-98/98-99	96	94	93	91	89	85	81	75	68
Colombia	98-99	95	87	84	81	75	66	60	56	51
Ecuador	98-99	94	89	86	83	81	55	48	45	42
Guatemala	99-00	95	84	77	69	64	63	35	25	19
Mexico	98-99/99-00	99	96	95	92	90	75	59	56	
Panama	98-99	99	95	93	90	88	83	76	73	70
Peru	98-99	99	95	92	89	86	79	67	62	57
<b>Dom. Rep.</b>	97-98/98-99	95	86	79	74	69	62	56	53	49
Uruguay	98-99	96	96	95	94	93	85	72	65	53

Source: Cabrol (2002), as cited in Alvarez (2004).

This low on-time progression to the next grade, combined with high enrollment, result in substantial overage for grade. As early as grade 3, more than 40 percent of children are two or more years overage while at the secondary level more than 50 percent are two or more years average, and up to 20 percent are three or more years behind normal progression (Figure II-3). The DR indeed has fairly similar proportions of overage students for the 1-9 grades as Honduras and Guatemala, all of which are substantially higher than in El Salvador (World Bank, 2004b).

Who are the overaged? Table AI-3 in Annex I presents some of the correlates of repetition, namely, we present the results of a Probit model predicting whether students are “on time” at the 9th grade. This is relevant because, as detailed below, repetition rates reach their highest level at that point. We define as on-time those children who are enrolled in the 9th grade and are 13-15 years old (which allows for some flexibility, given that 14 is the normative age); those 16 or older are considered overage.

The results suggest that boys and migrants are less likely to be on time, as is being a household head. A negative effect is also observed if children do not live in proximity to a paved road, which may proxy for supply side bottlenecks. On the other hand, having a father who has an incomplete or a complete secondary education is not significantly correlated with the probability of being on time on grade 9. The same is true for remittances and the number of children in the family. In terms of regional impact, relative to living in the *Distrito Nacional*, the region that has a significant differential impact is *El Valle and Valdesia*, with a negative effect. More comprehensive data, including characteristics of schools and teachers are needed to better understand this phenomenon.

Beyond slowing the accumulation of skills, repetition is of concern due to the possibility that it increases the probability of eventually dropping out. Arias and Ripani (2005) present survival functions calculated using the 2004 ENCOVI, and show that students who have repeated are substantially more likely to drop out. Again, such estimates should not be interpreted causally due to the endogeneity of repetition (since children who repeat



and drop out share similar characteristics) but they raise concerns regarding this phenomenon.

Thus, the first challenge is to understand the causes of repetition. Why are students held back so frequently, even in the face of the “social” or automatic promotion policies in place for some early primary grades? Are children forced to repeat grades because their attendance is so sporadic that teachers see no other option? Is learning so low (for any host of reasons, like frequent teacher absences, excessive class sizes or poor learning environment at home) that principals and instructors ultimately feel it is unwarranted to promote many children? Is retention at least partially random in the sense that, for example, two children with similar skills, who would score similarly in a standardized test, one is promoted but the other one is held back?

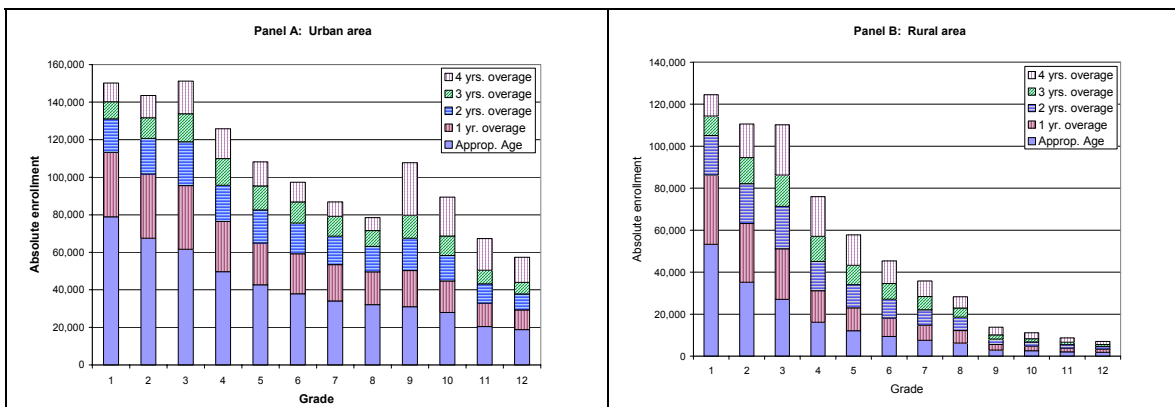
These are key questions on which systematic information must be gathered, and of course different answers to them would yield very different policy implications. Ultimately, answering them requires detailed and “hands-on” exploration of the production function of schooling in the educational sector, including experimental or quasi-experimental research. Additionally, lowering repetition will most likely require a host of interventions including, for instance, improvements in teacher training and curriculum design. In the next section we present substantial prima facie evidence that supply constraints may have quite a bit to do with repetition, and we make the associated point that any success in lowering repetition will very quickly put substantial pressure on educational supply and would thus require an accompanying host of supply related actions.

***Urban areas: significant reentry to secondary and substantial supply constraints.***

Figure II - 3 uses administrative data to present grade-specific absolute enrollments taken from Álvarez (2004). The absolute size of enrollment declines quickly with the grade level, and significantly more in rural areas (Panel B). There is a very clear “peak” at the 9th grade in the urban series (Panel A) so that there are almost 25 thousand more children in the urban 9th grade than in the 8th grade, an increase of about 30 percent. Additionally, the prevalence of overage children jumps substantially at this point—by the 9th grade, more than half of Dominican children in the urban area are two or more years above the normative age. Although we do not present the results here, this pattern in the percentage of overage is confirmed by the 2004 ENCOVI data.

**Figure II – 3**

**Grade-Specific Absolute Enrollment**



Source: Álvarez (2004).

Álvarez (2004) points out that these phenomena may reflect policies that encourage children who had dropped out of the educational system to reenter, particularly at the beginning of secondary education. This of course places a lot of pressure on educational supply at this level, and the government has addressed this by creating afternoon and night shifts at schools: 95 percent of urban secondary schools run two or more shifts, while 42 percent run three. The increased availability of evening shifts has encouraged teenagers who had dropped out of school to reenter in large numbers, often on a part-time basis while they continue working during the day. While having multiple shifts may be an optimal use of scarce infrastructure, clearly by the time schools are up to three shifts at least some students are getting limited instruction.

Excessive class sizes are a pervasive problem in the DR compared to other countries of Central America and the Caribbean, both in primary and secondary school (Figure II-4). Class sizes in secondary urban schools are quite high. Half of these schools have class sizes above 35, and 25 percent have class sizes above 70 (Álvarez, 2004). With such crowding, it is not surprising that many students do not learn much and are held back. In fact, the 9th grade in urban areas has the highest repetition rate of any grade in the educational system, reaching almost 28 percent in urban areas (Cabrol, 2002).

An important challenge is therefore to understand the reentry phenomenon. Are some of the students “readmitted” into the 9th grade unprepared in the sense that they might have never completed the 8th grade, or that they completed it too far in the past to have retained necessary knowledge? The household survey data does not provide confirmation of this: there are essentially no children who report being enrolled in the 9th grade who do not report having successfully completed the 8th. Since the ENCOVI does not ask retrospective questions along these lines, we cannot shed light on whether they might have completed the 8th grade far in the past. Still, the issue of reentry is clearly important, and we return to it below.

**Rural areas: upper primary and secondary supply constraints and migration.**

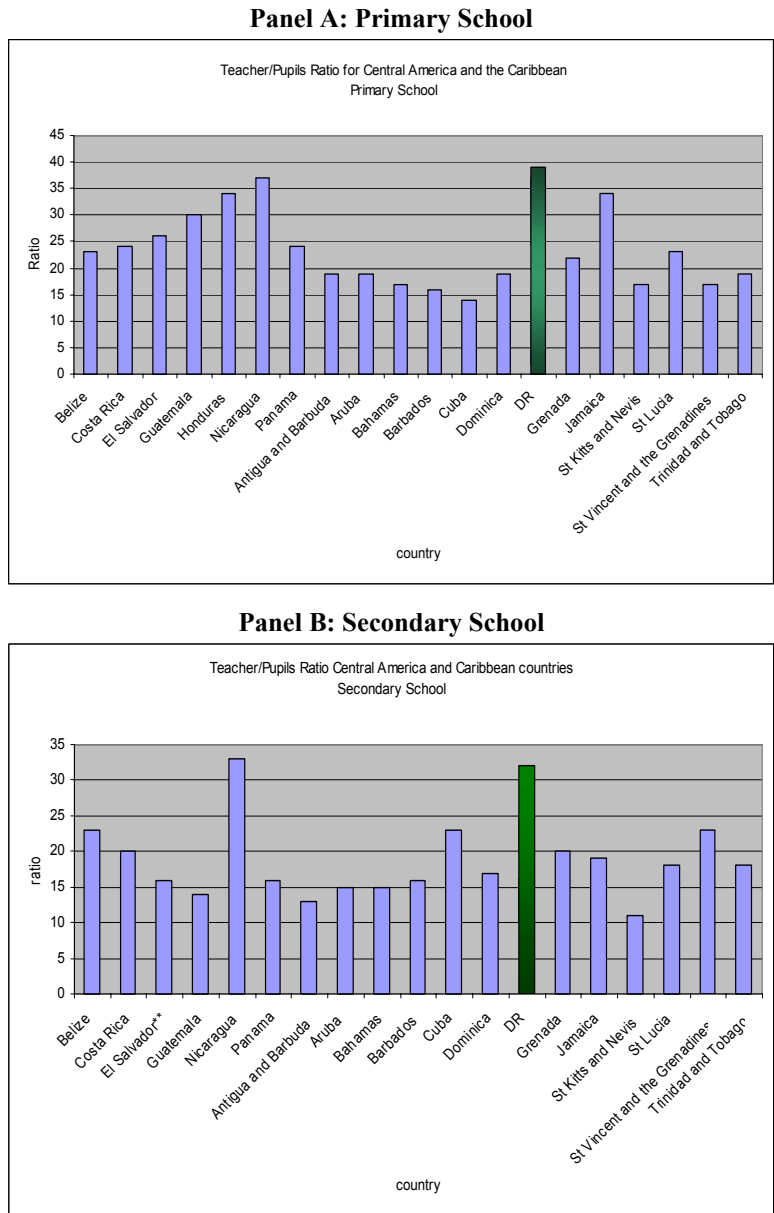
Supply constraints are also clearly apparent in the rural areas. For instance, about 44 percent of rural schools do not offer more than 4 grades and more than 50 percent of rural primary schools are multi-grade (Álvarez, 2004). One should thus expect the system to force out large numbers of students, and indeed Panel B in Figure II-3 confirms this, showing that rural enrollments decline significantly faster than urban ones.

This finding might seem to contradict Figure II-2, which suggested that enrollment rates in rural areas are fairly similar to those in urban areas. Figure II-1 also showed that this results in the fact that, up to about age 13 or 14, the difference in average years in school between urban and rural areas is very small. In other words, using household survey data, Figures II-1 and II-2 seem to suggest that there are only slight differences in enrollment

between urban and rural areas, while using administrative data, Figure II-3 would seem to suggest that these differences are quite large.

A phenomenon that would make these findings compatible is education-related migration from rural to urban areas. That is, the data is consistent with the possibility that as rural supply constraints begin to bind, a large number of rural children migrate to urban areas. This type of behavior is not rare in developing countries, where children move with relatives to larger towns or cities to attend school. Such migration would also help explain the observed spike in urban 9th grade enrollments.

**Figure II – 4**  
**Pupil/Teacher Ratios for Central America and the Caribbean, 2001**



Source: ECLAC (2004).

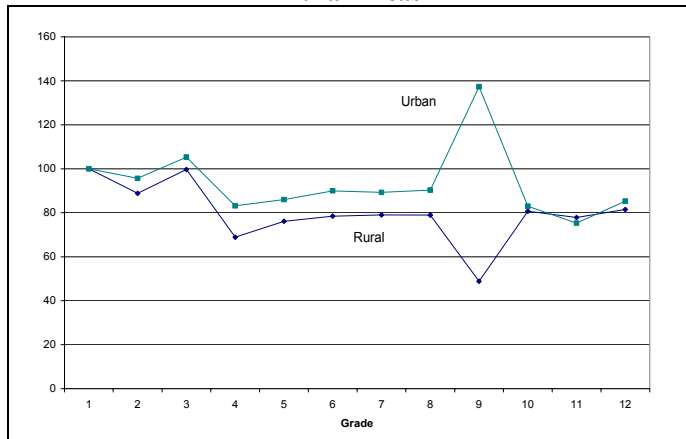
To further illustrate this point, Figure II-5 uses the data from Figure II-3 to plot urban and rural transition rates: the percentage of children who enroll in a given grade relative to the number that were enrolled in the previous grade.<sup>10</sup> The transition rates for rural areas are almost always below those for urban areas—it is the accumulation of these differences that results in the divergent performance observed in Figure II-3. By far the largest gap is observed in the transition from grade eight to grade nine in rural areas: enrollment by the 9th grade is about 60 percent that in grade eight. This is equivalent to 15 to 20 thousand students “disappearing” from the rural system at this stage. Again, this is expected given the rural supply constraints.

Figure II-5 suggests, however, that a number of these children may be reappearing in urban areas since in this case the transition rate from the 8th to the 9th grade is 40 percentage points above 100 percent. Thus, part of the spike evident in urban areas in Figure 5 may be due to genuine reentry, and part of it may just reflect migration from rural areas as children seek secondary level supply.

Finally, Figure II-5 also suggests that the children who remain in rural areas after this exodus may then be in locations that do offer secondary schooling, and they seem to do fine relative to their urban counterparts—the transition rates for the last two grades are essentially equal in both areas (about 80 percent).

As with reentry, the household survey data does not offer a clear confirmation of this. Table II-5 presents the proportion of children who declared they lived in a different place or town (a different *localidad*) five years ago, according to their age and grade of enrollment. Figures II-3 and II-5 suggest that one should observe a sudden increase in this percentage around ages 13-15 and grade 9. There are some increases in these ranges, but they seem to be too slight and too gradual to explain the behavior observed in Figures II-3 and II-5.

**Figure II – 5**  
**Transition Rates From Grade to Grade in the Urban and Rural Areas**



Source: Own estimates using administrative data.

<sup>10</sup> These are not calculated using a panel of students, but rather just the count of enrollments at different grade levels.

Table II – 5

Percentage of Children who Moved in the Past Five Years by Age and Grade Level

Age	% of children who lived in a different place ( <i>localidad</i> ) five years ago	Grade	% of children who lived in a different place ( <i>localidad</i> ) five years ago	
			ENCOVI (2004)	Census (2002)
6	6.4	1	5.8	5.3
7	4.5	2	5.9	5.7
8	6.4	3	4.5	5.6
9	4.9	4	4.4	5.5
10	5.0	5	5.5	5.7
11	5.6	6	3.8	5.9
12	4.5	7	3.5	6.3
13	4.5	8	4.2	6.1
14	5.0	9	4.9	5.9
15	5.6	10	4.8	5.9
16	4.4	11	4.2	5.9
17	6.9	12	4.5	5.8
18	8.2		--	--

Source: Ripani and Urquiola (2005) using the 2004 ENCOVI and the 2002 census data.

Table II-6 shows that among those individuals aged 3-22 who declared they had moved from another municipality in the past 5 years, only 14 percent stated that this was for school-related reasons. Of course, it is impossible to rule out that school supply is not a consideration among households that decide to move, and whose children might be counted under the “to reunite with family” and “seeking better services” categories.

Table II - 6

Stated Reasons for Migration, Individuals Aged 3-22

Reasons for Moving in the Past Five Years	Percentage
Looking for job	9.58
Seeking better income	5.52
Study / continue with studies	14.30
Reunite with family	55.94
Seeking better services	6.72
For marriage	5.28
Other reasons	2.66
<b>Total</b>	<b>100</b>

Source: Ripani and Urquiola (2005) using the 2004 ENCOVI.

Finally, Column 1 in Table II-7 focuses on the 14 percent of individuals who state they moved for educational reasons (Column 2 refers to the full sample, for comparison), and looks at the composition of the households in which they live. As one might expect, these children are much more likely to report living with members of their extended family or unrelated people: while 65 percent of respondents aged 3-22 report being the son or daughter of the head of household, only 17 percent of those who migrated for educational reasons do so.

Table II – 7

**Relationship with the Head of Household for Individuals Aged 3-22 Who Moved Because of Educational Reasons**

Relationship with Head of Household	Only Those Who Migrated Because of Their Studies (1)	Full Sample (2)
Head of Household	7.0	2.3
Spouse	1.5	3.2
Son/Daughter	16.9	64.8
Step son/Daughter	4.0	6.8
Son or Daughter in Law	--	0.6
Grandson/Daughter	9.5	15.0
Father in Law	--	0.0
Brother	--	1.4
Other family member	11.8	3.7
Not a family member	30.7	1.9
Housekeeper	18.5	0.2
<b>Total</b>	<b>100</b>	<b>100</b>

Source: Ripani and Urquiola (2005) using the 2004 ENCOVI. - - means that sample sizes are too small.

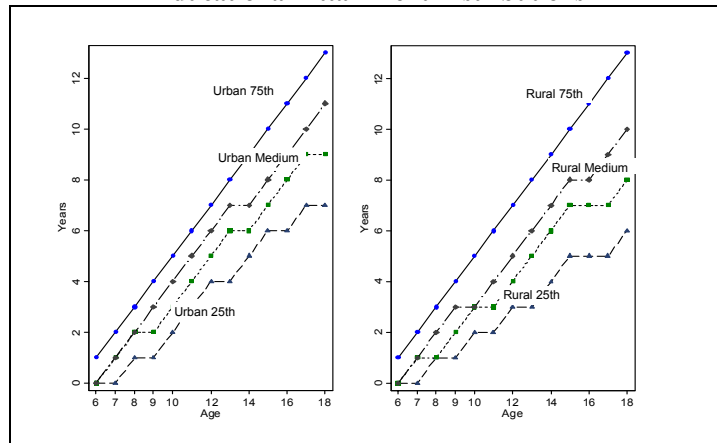
To summarize the evidence in this section, the administrative data suggests that the urban educational system has significant supply constraints, particularly at the beginning of the secondary level. This seems to be partially due to reentry, and partially due to the arrival of rural children, which in turn seems to reflect the fact that secondary level supply in rural areas is even more limited. Neither administrative nor household survey data allows disentangling the relative magnitude of these two factors. Further research is needed to ascertain the exact magnitude of these phenomena, but it seems clear that successfully reducing repetition would require addressing both rural and urban secondary level supply constraints.

**D. Do children get to “test” supply constraints in rural areas?**

One might have expected the transition between the first two cycles of primary schooling (that is, the transition between the 4th and 5th grade) to also produce an inverse behavior in rural and urban transition rates in Figure II-5. This is not the case, which may reflect the fact that repetition is higher in the rural areas, so that many children never get to “test” this supply constraint. For instance, a child who enters at age seven and fails a grade twice, would be 13 by the time he has a shot at going to 5th grade, and by that age dropping out becomes more likely. Figure II-6 illustrates this by showing years of schooling observed at the 25th, 50th, and 75th percentiles of the years of schooling distribution.<sup>11</sup> This figure shows that the median rural child only reaches grade four by age 12, and the student at the 25th percentile has only made it to grade three. Because of such large delays, the supply constraint binds less often than one might think.

<sup>11</sup> In other words, suppose that a country has 100, 15 year olds, and that one orders them from the individual with the least years of schooling to the one with the most. These measures would pick up the *number of years* of schooling that the 25<sup>th</sup>, 50<sup>th</sup>, and the 75<sup>th</sup> individuals have. In a country with no inequality of attainment, say one in which every child enters school at the same age and no one ever repeats, these three would be equal, and the gap between them would be zero.

**Figure II – 6**  
**Average Years of Schooling at Different Percentiles of the**  
**Urban and Rural**  
**Educational Attainment Distributions**



Source: Ripani and Urquiola (2005) using the 2004 ENCOVI.

On the other hand, this last fact may be endogenous: it is possible that teachers, knowing that some children will not be able to migrate and attend a school with further offerings elsewhere, may see no downside in holding them behind. In other words, a student may remain in (possibly multi-grade) schools that do not offer instruction beyond the 5th grade, which again is fairly common in rural areas. While this is obviously not ideal, if the alternative is dropping out, it may not be a bad option if the child is gaining at least some skills. Yet again, this suggests that making definite statements on the harm of different types of repetition requires more information than we have at hand here.

### III. EDUCATION EXPENDITURES: LEVEL, ALLOCATION, EFFICIENCY AND TARGETING

#### A. Low investment in the education sector, especially in secondary education.

The DR's expenditures in education are low by international standards. The preliminary figures for the 2005 executed budget show that 1.9 percent of GDP went to education down from 2.9 percent of GDP executed in 2002. As a share of total public expenditures (net of debt service), expenditures on education, which grew from 13.5 (14.8) percent in 1995 to 16.7 (18.2) percent in 2000, are down to 8.8 (10.7) percent in the 2005 budget allocation. DR expenditures on education, as a percent of GDP, are comparable to those of Guatemala, which is the country spending less in Central America. Extremely limited resources are allocated to public Early Childhood Development (ECD) and pre-school programs (2.2 percent of budgeted public expenditures in education in 2005).<sup>12</sup> Basic education receives more than half of the public resources spent on the sector (54 percent in 2005) but the gross amount is still insufficient to meet the supply-side (quality and quantity) constraints that create inequities in access in rural areas, especially in the second cycle of primary education; and poor urban areas. Beyond primary education there is a distortion in the allocation of resources between secondary (12.1 percent of budgeted public education expenditures in 2005) and university levels (10.9 percent of budgeted public education expenditures in 2005), with university institutions receiving much more public resources per student than secondary institutions.<sup>13</sup> This pattern of under-investment in secondary education relative to tertiary education is also observed in Honduras and Guatemala (World Bank, 2004b).

The DR seems in fact fairly input and, to a less degree, output efficient with the little it spends in education at least when it comes to enrollment. Recent research (Herrera and Pang, 2004) has shown that the DR education sector is input efficient in terms of gross primary and, to a less degree, secondary enrollment, i.e. it uses less resources than, for example, many other countries in LAC and in the world to achieve the same output. This is consistent with the evidence shown in the first part of this study and confirms that the DR achieves high enrollment spending relatively little. However, the DR is not as input efficient when other education indicators are considered, such as years of schooling and grade completion. In fact, as shown above it takes more than 11 years in school to complete primary. The DR also appears less output efficient than the LAC average in terms of gross secondary enrollment, meaning that it could obtain more for what it spends (Herrera and Pang, 2004). Inefficiencies in input composition, on expenditure management and teacher management, as described in the next section, may explain this result. Finally, it is critical to note that even if the DR appears as fairly (input and output) efficient given its low level of expenditures, there is still a significant discrepancy between the observed and the desired output levels. The DR performance in terms for example of primary and secondary completion, net secondary enrollment and average years of schooling cannot certainly be defined as desirable.

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<sup>12</sup> Source: National Budget Office in Lizardo, J. (2005).

<sup>13</sup> World Bank (2004c), Álvarez (2004) and Lizardo (2005).



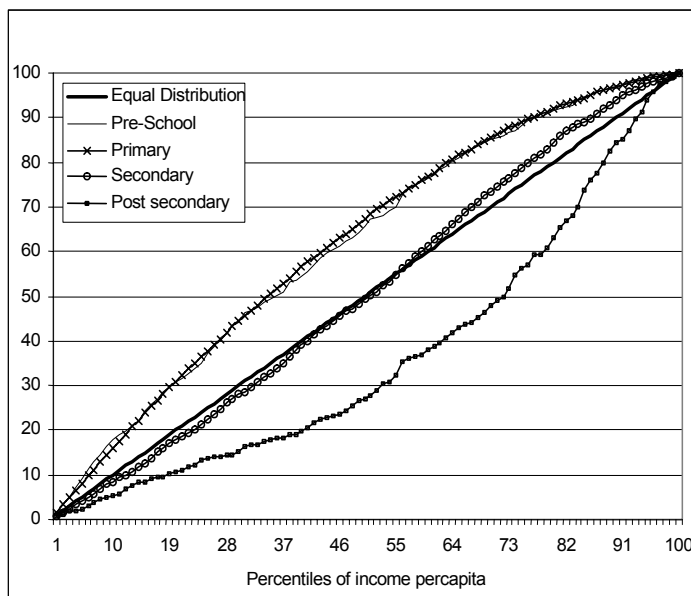
## B. How progressive are education expenditures in absolute terms?

*A mixed picture.* Figure III-1 shows that public spending at the pre-school and basic school level in the DR is progressive.<sup>14</sup> However, given that there are few state-sponsored programs at pre-school level targeted to the poor, overall lower income children enroll in pre-school at significantly lower rates, as stated by differences at ages 3-5 (highlighted before).

Although there are some access issues because of the important pending issue related with children's lack of birth certificates, the enrollment profile is relatively equitable up to age 14 which, given the high prevalence of overage among students, coincides with the two cycles of primary education.

Overall, public expenditures at the secondary level appear to be regressive for the lower half on the per capita income distribution, and progressive for the upper half (Figure III-2). However, public expenditure in secondary education at the rural level is progressive. At the post-secondary education level, public subsidies are strongly regressive. In fact, access to post-secondary education is extremely unequal in the DR, with virtually none of the poor attending

Figure III - 1  
Incidence of Public Education Utilization

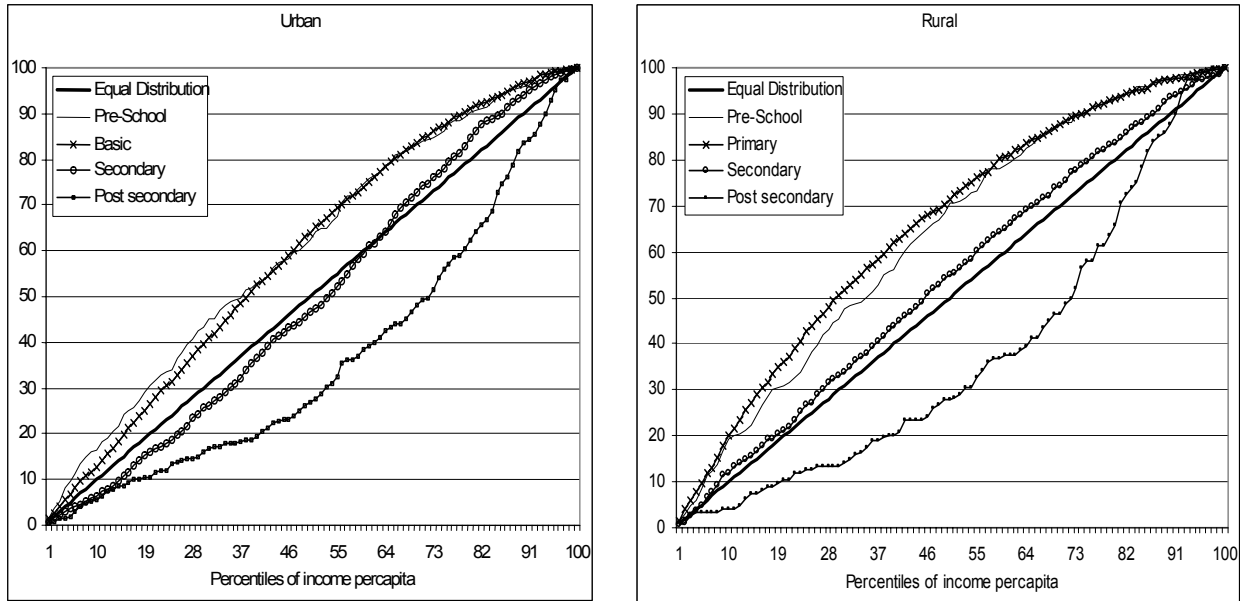


Source: Own estimates based on the 2004 ENCOVI.

Increased funding for secondary education (*media*)—which is very low (0.24 percent of GDP budgeted in 2005) compared with both the country's investment at other education levels and within international benchmarks—should be targeted to remove the bottlenecks described above. Additional resources could come from the proceeds of cost recovery measures at the tertiary education level and, to a larger extent, from an increase of the total public expenditures (net of debt service) devoted to education. If adequately targeted, increasing funding for secondary education would also give more students, especially from low socioeconomic background, the support required to complete basic and pre-university education.

<sup>14</sup> The analysis assumes uniform per student spending within each education level. Unfortunately, the available budgetary information does not allow an accurate analysis of the distribution of education expenditure per region or province, which would indeed be very useful to improve the overall targeting of education expenditures.

Figure III – 2  
Incidence of Public Education Utilization: Rural/Urban



Source: Own estimates based on the 2004 ENCOVI.

#### **IV. EDUCATIONAL POLICES FOR TRANSLATING HIGH EDUCATIONAL DEMAND INTO YEARS OF SCHOOLING**

The Dominican educational system has been making progress since the 1990s crisis, and recovering from the low levels of enrollment and educational progression of the early 1990s. The system is now facing new challenges: (i) increasing the allocation of resources, especially in secondary education and improving the efficiency of their use; (ii) strengthening the equity of the system through quality enhancing measures in rural and marginal urban areas; (iii) improving access to pre-school, the second cycle of basic education in rural areas and secondary education; and (iv) enhancing human resources management.

##### **A. A significant improvement in the country's educational outcomes will require a combination of enhancing output efficiency and increasing the level of expenditures in the sector**

The evidence presented above suggests that there might be limits to what can be achieved with pure efficiency gains, unless expenditures in education are increased. The DR's expenditure on education is low by international standards (less than half the average for the LAC region) and remains below the Government's own target (4 percent of GDP or 16 percent of total central government expenditure, as set forth in Education Act 66-97). As shown above, public investment in the sector shrank in the last five years both as share of GDP and as share of total public expenditures (net of debt service).

Given the tight fiscal situation, what is critical for the GDR is to define a sustainable growth rate for the envelope of resources to the sector and the tradeoffs this implies in terms of budget reallocations from other sectors, for example from social assistance.<sup>15</sup> Any increase and/or reallocation of resources to the education sector should focus on improving the equity of access to good quality education and prioritize the secondary level so as to rise per student expenditures, to meet key challenges in a system that needs to close the secondary education gap.

This study's findings and Álvarez (2004) emphasize the importance of two sets of policies and measures: those intended to enhance the equity of the system through quality improvements and those aiming at increasing access to education for specific groups of the population. Many of these policies have been adopted by the State Secretariat of Education (SEE) in the last few years but are still in their early implementation stage and renewed efforts will be required by the GDR to consolidate and strengthen them. Given the current tight fiscal situation, the government might consider prioritizing in the short-term quality-enhancing measures with significant potential to improve learning achievements, reduce repetition rates and improve progression, particularly in rural and urban marginal schools. Measures to ensure that no child is left behind because of lack of proper documentation should also be supported in the short-term. In the medium term, successfully reducing repetition and improving progression would require to address both rural and urban supply constraints and to improve access to education for specific groups. Selected specific policy options are discussed below.

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<sup>15</sup> Inter-American Development Bank and World Bank (2006), chapters IV and V.

## V. IMPROVING EQUITY OF THE SYSTEM THROUGH QUALITY ENHANCING MEASURES

### A. Improving the pedagogical model in rural multigrade schools.

Regarding equity of access to good-quality education, several priority areas require action.<sup>16</sup> In the first cycle of primary education in rural areas, more than 50 percent of schools are multi-grade. Since 1998, the DR has developed a pedagogical model for multi-grade schools (*Escuela Multigrado Innovada*, EMI) based on best practices in other countries such as the experience of the Colombian *Escuela Nueva* and the Chilean MECE Rural. However, the adoption of this model has been restricted to less than 10 percent of all multi-grade schools. The consolidation and improvement of this model (including the development of teachers' supervision and training schemes in microcenters, supported by adequate materials) and its expansion to all multi-grade schools should therefore be a priority. Currently, the Multiphase Program for Equity in Basic Education (*Programa Multifase para la Equidad de la Educación*) of the SEE, supported by the Inter-American Development Bank, supports a four-year plan to expand the EMI model to all multi-grade schools in the country and improve quality of education in rural areas.

### B. Targeting poorly performing schools in urban marginal areas.

Access to good quality education is not only a problem confined to rural areas. Interventions targeted to poorly performing schools in urban marginal areas, especially those where repetition rates (and therefore the risk of students' educational failure, i.e. dropping out) in the first grades of basic education are higher, should be supported. The mentioned Program for Equity in Basic Education is expected to channel resources to tailor specific interventions to urban marginal schools with the highest repetition rates in 3rd grade. In the last couple of years, the SEE has developed pilot programs for overage students and summer courses aimed at strengthening academic competencies of students before they enter secondary education. The objective of these interventions is to reduce students' probability of failing and repeating 9th grade. If successful, these types of interventions have the potential of greatly improving the efficiency of public expenditures in education. The development and expansion of this type of interventions should therefore be supported and their impact evaluated.

### C. Developing and applying tests in 4th grade (or earlier) of primary education.

This could be done to a representative sample of rural, urban-marginal and urban schools to be able to assess students' learning achievements and take corrective measures at very early stages. Back in 1996, 4th grade tests were eliminated. The system was left with no tools to measure students' achievements in the first critical grades of basic education where delays on educational achievements start to accumulate.<sup>17</sup> The application of international standardized tests should be encouraged to assess the overall performance of

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<sup>16</sup> Álvarez (2004).

<sup>17</sup> Assessing students' learning through the development of National Assessment Systems and improving teaching methodologies are challenges faced also by Central American countries taking part in the CAFTA initiative (World Bank, 2004b).

the Dominican education system vs. the rest of the world, a practice now more common in Central America.<sup>18</sup>

**D. Rationalization of teachers' assignments.**

The implementation of the above measures requires schools to be able to rely on a stable roster of teachers committed to the community. Currently many teachers (usually called "taxi" teachers) work two shifts (*tandas*) in different educational centers under different management structures. It is recommended that the SEE take active steps towards a managed re-organization of schools, unifying different shifts (*tandas*) under the same management and re-assigning teachers who work two shifts to the same educational center.

**E. Strengthening decentralized management of educational centers by establishing decentralized school boards and giving them the financial resources required for pedagogical and curricular innovations.**

The General Law of Education and the Regulation for Decentralized Boards made it possible to advance in the creation of these boards in 200 secondary schools. This process, still at early stages, needs to be supported and strengthened also at the basic education level.

**F. Reforming teacher training supply to ensure a real implementation of the curriculum in the classroom.**

Teachers' training is still conceived as simply linked to the achievement of an additional academic title. Universities provide training, but this is not usually shaped by an initial diagnosis of the situation nor is it subject to an ex-post evaluation of results. No training follow-up and supervision of teachers' activity in the classroom is taking place. It is recommended that the SEE work to develop a training model based on initial assessments and followed by selected supervision and evaluation of teachers' activities in the classroom to evaluate the degree of effective implementation of the curriculum.

**G. Developing pedagogical materials and guides to support teachers' activities and students' learning processes.**

With the exception of textbooks, students and teachers rely on very scarce didactic and pedagogical material to guide and support the learning process in the classroom.

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<sup>18</sup> Most Central American countries, with the exception of Guatemala, have set up by now a standardized testing system in grades 3 and 6 (World Bank, 2004b) .

## VI. IMPROVING ACCESS FOR SPECIFIC GROUPS

This chapter shows that demand for education is high, however it also highlights areas where improving access might be key to increase the educational achievements of specific segments of the population. Three potentially very important areas of intervention are: (i) increasing pre-school access to the poorest segments of the population; (ii) increasing access to the second cycle of basic education in rural areas; and (iii) expanding access to secondary education.

The coverage of pre-school education is still low especially among the poorest, where only 16.1 percent of children between three and five years of age receive some pre-school attention, compared to 75 percent of those in the highest deciles of income. Pre-school education is known to be strongly linked to children's better preparation to start first grade, to favor timely enrollment of kids in the educational system, reduce their probability of dropout and repetition, and improve children's academic performance in the first grades.<sup>19</sup> The SEE program of initial education for the poorest segments of the population, supported by the World Bank, aims at increasing enrollment at this level.

A second area of intervention is the expansion of enrollment for the second cycle of basic education in rural areas. Children's lower progression in basic education in rural areas could be explained by several factors, both on the supply and on the demand side. On the supply side, the weaknesses of micro-planning tools prevent a more efficient use of resources for the provision of the second cycle of basic education to thousands of small multi-grade schools. Investment planning represents a major challenge for the SEE. At this stage, it is critically important to determine where access needs to be expanded to achieve the most efficient use of resources. The development and consolidation of a geo-referenced system of educational statistics should be a priority for the sector.

A third priority area of intervention should be increasing access to secondary education (*media*). To be able to expand enrollment at this level, investing in infrastructure to reduce bottlenecks will be key. The need for expanding investment at this level is even more critical if appropriate measures are taken to improve school progression in basic education. The secondary education program of the SEE, financed by the Inter-American Development Bank (Multiphase Program for Modernization of Secondary Education) aims, among other things, at expanding school infrastructure to reduce supply-side bottlenecks and meet the increasing demand for enrollment at this level. The GDR might also want to consider flexible delivery modalities, such as distance or semi-distance education, taking into consideration that an important set of pre-conditions need to be ensured to make these options work (adequate materials, teachers' training modalities and supervision, among others). Additionally, especially in urban areas, public-private partnership could be explored if there are some good quality private secondary schools with excess capacity.

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<sup>19</sup> Álvarez (2004).

Actions are needed to ensure that no child is left behind because of lack of proper documentation (i.e., birth certificate). While this is an institutional constraint that partly lies outside the realm of the educational system, it does affect equity and skills accumulation as it is suggested by undocumented children's slower school progression. Undocumented students should not be automatically disqualified from taking the national exam at the end of 8th grade. This prohibition might indeed be affecting parents' decision of investing in their children's education at earlier grades. In fact, faced with the expectation of their children's not being able to complete primary, families may find it unprofitable to invest in only a few years of education that have a high opportunity cost (foregone consumptions today) and will not ensure reaping enough future benefits for their children (i.e. the earnings premium of a complete primary or secondary education). The experience of the past two years has proved that the SEE could play an important role to support undocumented children obtaining their birth certificate. The SEE policy that allows undocumented children to enroll in school should be supported and widely publicized.

## VII. ADDITIONAL CHALLENGES AND RECOMMENDATIONS

The sector challenges and policy measures discussed in previous paragraphs are those most closely related with the empirical evidence presented in this study. However, the sector faces a wider set of pending issues that deserve attention. Some of these issues, summarized by Álvarez (2004), can be grouped under two comprehensive objectives: (i) strengthening the financial management and allocation of public expenditures in the sector, and (ii) improving human resources management.

### A. **Strengthening the Financial Management and Allocation of Public Education Expenditures.**

**Consolidate education expenditure under the control of the SEE.** In the tight fiscal environment of the DR, it is very important to keep consolidating educational expenditures under the control of the SEE. The efficiency of public expenditures in the sector can be improved as long as resources keep being channeled to finance integral sector policies and programs under the SEE management. An improvement in the efficiency of the execution of the resources allocated to the SEE should come from completing the implementation of the Integral System of Financial Management (SIGEF) to local delegations.

**Boost efforts to support measures that improve the overall efficiency of the system.** Measures aimed at increasing school progression and reduce educational failures as well as measures linking teachers' incentives to their performance, could greatly reduce the waste of resources invested in a sector that currently turns high school demand and permanence in the system in relatively few years of accumulated education.

### B. **Improving Human Resources Management**

**Strengthen the management of the sector's human resources.** Many challenges lay ahead, such as: (i) reinforcing teacher's supervision by SEE staff at the regional and district level in order to ensure compliance with contractual norms and establishing a body in charge of handling disputes; (ii) improving hiring practices, not only in terms of quality standards, but also on the basis of more accurate planning exercises mainly involving an assessment of enrollment trends, infrastructure availability and re-location of existing human resources; and (iii) full implementation of the Teachers' Statute of promotions and re-categorization system (establishing a set of incentive maximizing teachers' performance).<sup>20</sup>

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<sup>20</sup> Establishing the right set of incentives is also a challenge faced by the education sector in Central American countries taking part in the CAFTA initiative (World Bank, 2004b).



## BIBLIOGRAPHY

- Álvarez, C. 2004. *La Educación en la República Dominicana: Logros y Desafíos Pendientes*. Series of economic and sectorial studies, IDB, Washington, D.C.
- Arias O. and L. Ripani. 2005. "Progressing through School: Which Constraints Matter? For Whom?" In progress.
- Boivin, J., Deschenes, O. and N. R. Schady. 2002. "The effect of Macroeconomic Crises on Education Outcomes: Evidence from Peru". World Bank Working Paper, Washington, D.C
- Cabrol, M. 2002. "*Los Desafíos de la Educación Secundaria. ¿Qué nos Dice el Análisis de Flujos?*" Series of economic and sectorial studies, RE-02-004, IDB, Washington, D.C.
- Cox, A. and M. Ureta. 2003. "International Migration, Remittances, and Schooling: Evidence from El Salvador", *Journal of Development Economics* 72, pp. 429-451.
- Herrera, S. and G. Pang. 2004. "Efficiency of Public Spending in Developing Countries: An Efficiency Frontier Approach", World Bank Working Paper, Washington, D.C.
- Inter-American Development Bank and World Bank 2006. "Dominican Republic Poverty Assessment: Achieving More Pro-Poor Growth," Washington D.C.
- Lizardo, J. 2005. "*El gasto social en la República Dominicana 1995-2005: Tendencias y Desafíos*" Economic Analysis Unit, Technical Secretariat of the Presidency, Santo Domingo, Dominican Republic.
- Ripani, L. and M. Urquiola, 2005. "The Dominican Republic: Educational Overachiever and Underperformer", Background Paper, Inter-American Development Bank, Washington D.C.
- Urquiola, M. and V. Calderón. 2004. "Apples and Oranges: Educational Enrollment and Attainment Across Countries in Latin America and the Caribbean. Mimeo, Columbia University.
- World Bank. 2004a. *Making Services Work for Poor People*. The World Bank and Oxford University Press, New York, NY.
- \_\_\_\_\_. 2004b. *Rural Flagship*. Washington, D.C.: World Bank.
- \_\_\_\_\_. 2004c. *Central America: Education Strategy Paper*. Vol. 1. Washington, D.C.: World Bank.
- \_\_\_\_\_. 2004d. "Public Expenditure Review : reforming institutions for a more efficient public expenditure management". Washington, D.C.: World Bank.
- \_\_\_\_\_. 2001a. "PRSP Sourcebook: Education Chapter and Technical Notes." Global Education Reform Working Paper. Washington, D.C.: World Bank.

**ANNEX I:**  
**REGRESSION ANALYSIS OF EDUCATION OUTCOMES**

**Table A.I – 1**

**Distribution of Remittance Recipients in School-Age by Per Capita Income Quintiles**

	Urban			Rural		
	% People in Quintile of “Per Capita Income without remittances”	Median Per Capita Remittances	% People in Quintile of “Per Capita Income with remittances”	% People in Quintile of “Per Capita Income without remittances”	Median Per Capita Remittances	% People in Quintile of “Per Capita Income with remittances”
1	17.9	136.8	10.62	25.33	126.3	14.45
2	20.7	230.1	16.16	22.41	230.1	21.28
3	20.6	345.1	20.62	17.23	257.8	18.09
4	22.8	662.9	24.22	18.10	545.3	23.51
5	18.1	2,300.8	28.38	16.93	1,325.9	22.67

*Notes:* (1) Per capita remittances are in Dominican pesos; (2) Weighted observations.

*Source:* Own calculations using the 2004 ENCOVI.

**Table A.I – 2**  
**Correlates of the Probability of Dropping Out of School**  
**(Cox Proportional Hazard Ratios)**

	National	Urban	Rural
Male	1.302 [6.68]***	1.309 [5.10]***	1.272 [3.97]***
Maximum Mother Education = Primary	1.370 [6.29]***	1.346 [4.56]***	1.321 [3.48]***
Maximum Mother Education = Secondary	0.868 [1.94]*	0.941 [0.69]	0.700 [2.70]***
Maximum Father Education = Primary	1.371 [5.17]***	1.676 [6.38]***	0.982 [0.20]
Maximum Father Education = Secondary	0.782 [3.13]***	0.966 [0.36]	0.515 [4.63]***
No Access to Paved Road	1.644 [9.49]***	1.728 [8.31]***	1.403 [3.82]***
Household Income (no remittances)	0.955 [1.46]	0.956 [1.23]	0.896 [1.31]
Remittances (log)	0.952 [1.95]*	0.965 [1.10]	0.951 [1.24]
Remittances (yes=1)	1.113 [0.30]	1.260 [0.55]	1.099 [0.11]
Urban	0.773 [6.05]***	-	-
Children between 6 and 12 years	1.068 [2.59]***	1.016 [0.42]	1.132 [3.47]***
Children between 13 and 17 years	0.723 [10.88]***	0.723 [7.80]***	0.730 [7.33]***
Migrants (last 5 years)	1.914 [11.28]***	1.877 [8.42]***	1.943 [7.21]***
Birth Certificate	4.185 [21.71]***	4.534 [15.63]***	3.669 [14.18]***
Region = Valdesia	1.344 [3.93]***	1.374 [3.31]***	1.439 [2.79]***
Region = Este	1.398 [4.53]***	1.380 [3.71]***	1.457 [2.60]***
Region = Cibao Central	1.107 [1.23]	1.037 [0.30]	1.249 [1.72]*
Region = Nordeste	1.175 [1.93]*	1.275 [2.10]**	1.179 [1.24]
Region = Norcentral	1.193 [2.53]**	1.196 [2.05]**	1.264 [1.86]*
Region = Noreste	1.130 [1.43]	1.260 [2.15]**	1.048 [0.32]
Region = El Valle	1.459 [4.70]***	1.441 [3.19]***	1.562 [3.44]***

**Table A I – 2**  
**Correlates of the Probability of Dropping Out of School**  
**Cox Proportional Hazard Ratios (Continued)**

	National	Urban	Rural
Region = Enriquillo	1.488 [4.97]***	1.173 [1.51]	2.130 [5.58]***
Interaction: Female Head of Household and Remittances	0.964 [0.38]	0.857 [1.23]	1.128 [0.72]
Interaction: Max Educ. Parents Primary and Remittances	1.502 [2.25]**	1.328 [1.35]	2.096 [1.83]*
Interaction: Max Educ. Parents Secondary and Remittances	2.209 [4.16]***	1.752 [2.58]***	3.805 [3.13]***
Interaction: No Access to Paved Road and Remittances	0.783 [2.31]**	0.763 [2.06]**	0.875 [0.69]
Observations	12,714	7,507	5,207

Absolute value of z statistics in brackets.

\* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

*Notes:* (1) School-age individuals (3 to 22 years old); (2) Years of education for those with more than 12 years of education are truncated at 12 to focus on primary to secondary transitions; (3) Significant figures are in the shaded areas.

*Source:* Own calculations using the 2004 ENCOVI.

**Table A I – 3**  
**Probit Model for Being on-Time at the 9<sup>th</sup> Grade**

Independent variables	Probit estimates (Marginal effects)
Male	-0.159 [0.038]***
Head of Household	-0.313 [0.144]**
Urban	-0.003 [0.043]
No Access to Paved Road	-0.146 [0.047]***
Migrant	-0.086 [0.048]*
Number of Children Younger than 7	-0.032 [0.034]
Remittances	0.026 [0.063]
Paved Road * Remittances	0.080 [0.086]
Maximum Father's schooling: Secondary School [Complete or Incomplete]	0.033 [0.081]
Maximum Father's schooling: Tertiary School [Complete or Incomplete]	0.228 [0.170]
Maximum Mother's schooling: Secondary School [Complete or Incomplete]	-0.015 [0.076]
Maximum Mother's schooling: Tertiary School [Complete or Incomplete]	-0.001 [0.209]
Members of Household	-0.001 [0.011]
Valdesia region	-0.123 [0.067]*
Este region	-0.092 [0.070]
Nordeste region	0.028 [0.078]
Cibao Central region	-0.107 [0.074]
Norcentral region	-0.101 [0.064]
Noroeste region	0.014 [0.083]
El Valle region	-0.216 [0.074]***
Enriquillo region	-0.097 [0.075]
Observations	724

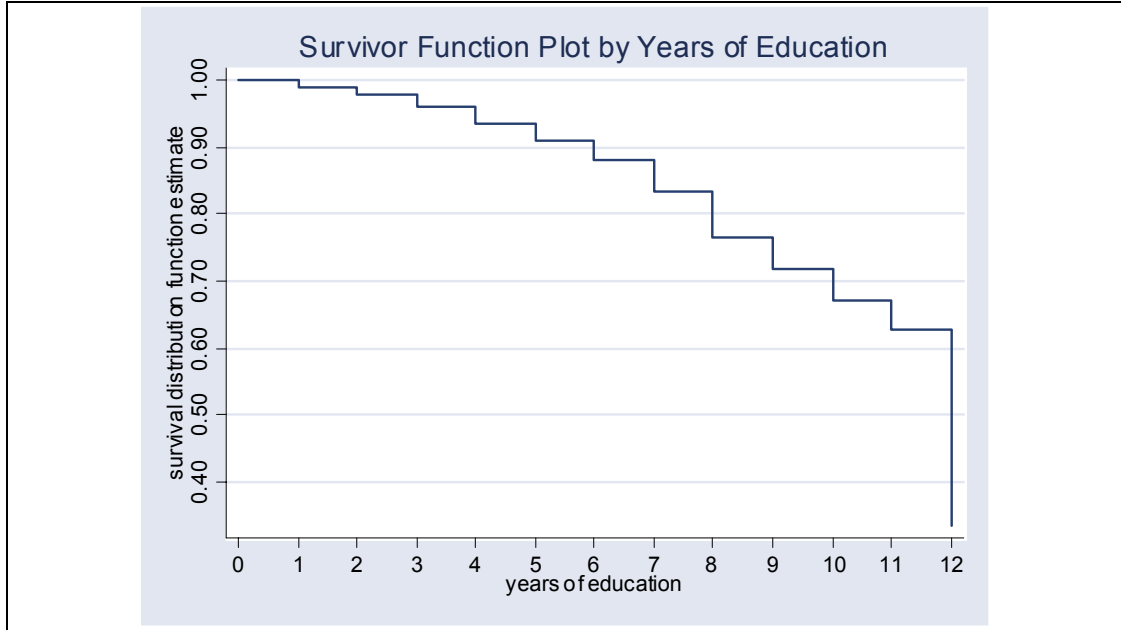
Standard errors in parentheses.

\* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

**Source:** Own calculations using the 2004 ENCOVI.

Figure A I – 1

Probability of being in school: Survival Functions Plots by Years of Education

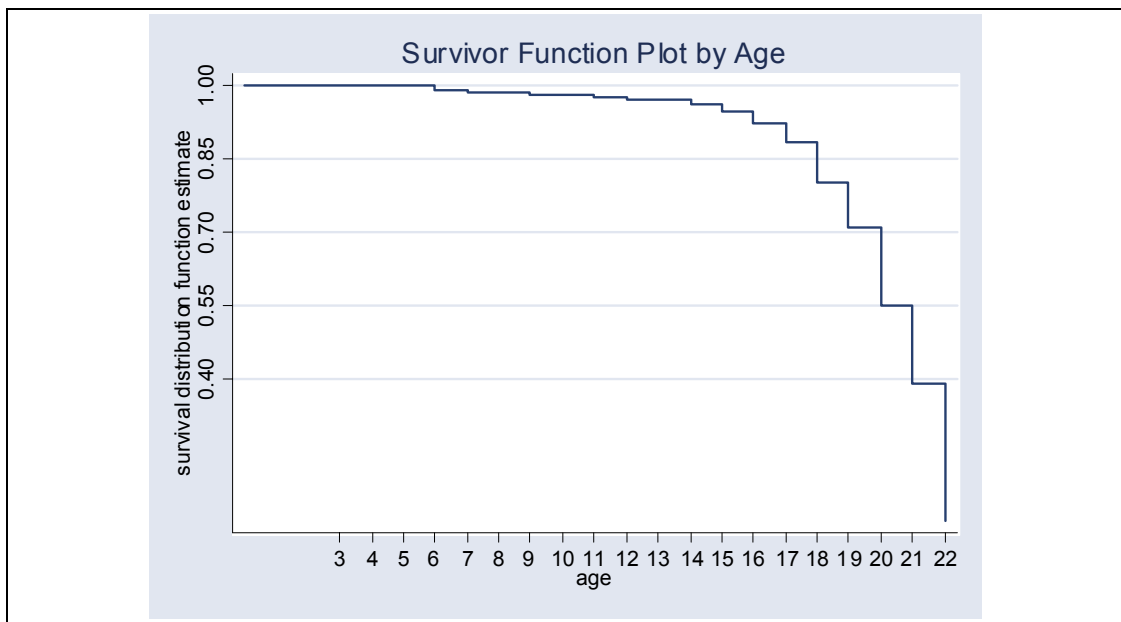


Notes: (1) School-age individuals (3 to 22 years old); (2) Years of education for those with more than 12 years of education are truncated at 12 to focus on primary to secondary transitions.

Source: Own calculations using the 2004 ENCOVI.

Figure A I – 2

Probability of being in school: Survival Functions Plots by Age



Notes: (1) School-age individuals (3 to 22 years old); (2) Years of education for those with more than 12 years of education are truncated at 12 to focus on primary to secondary transitions.

Source: Own calculations using the 2004 ENCOVI.