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*A View from LATHR
No. 28*

EDUCATION AND THE LABOR MARKET IN URUGUAY

by

George Psacharopoulos and Eduardo Velez

*Human Resources Division
Technical Department
Latin America and the Caribbean Region
The World Bank*

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June 1992

"A View from LATHR" is a series of occasional flyers produced by the Human Resources Division of Latin America and the Caribbean Technical Department of the World Bank for the purpose of stimulating discussion among staff on key issues facing the sector. The views expressed here are those of the authors and should not be attributed to the World Bank.

Abstract

This paper uses data from the 1989 Uruguayan Household Survey to investigate the relationship between earnings and education in that country. Mincerian earnings functions fitted to nearly 10,000 workers reveal that each extra year of schooling yields a private rate of return of 9.2 percent, which is comparable to the returns observed in the more industrialized countries. Among the other findings of the study: Females realize a full percentage point advantage over males on the return to their educational investment while private sector employees enjoy a nearly five percentage point advantage over public sector employees -- a finding that highlights the recognition of the productive value of education by industry. When the full cost of education (both public and private) is considered and education is broken down by level of schooling, primary education exhibits the highest rate of return -- nearly double that of secondary education -- whereas graduates of technical/vocational schools and teacher training courses enjoy only minor returns on this type of investment.



I. Introduction

Uruguay experienced rapid economic growth during most of the first half of the twentieth century, but the overall macroeconomic environment during the past couple of decades has not been favorable for educational development. The average annual growth rate in the 1980s was negative in the industry sector and less than one percent in agriculture and services. Stagnation has also meant little employment growth in the private sector -- in fact public employment has expanded to absorb labor force increases.^{1/} Central Government jobs increased from about 100,000 in 1970 to 163,000 in 1975, accounting for 26 percent of total employment. Since then, however, the share of public employment has decreased to around 20 percent in the 1990s.

The structure of the economy also has important linkages to educational development. In Uruguay the agricultural sector has shrunk, losing 30 percent of the workers that had in 1961; that year there were 210,700 workers while in 1986 agricultural workers numbered 153,000. The industrial sector is relatively small with a share of 28 percent of the GDP in 1989. Uruguay is in fact less industrialized than Latin American countries of similar income levels such as Venezuela and Brazil, and even relative to countries with a lower income level, such as Chile, Mexico or Colombia. The industrial sector has decreased since the 1960s; the manufacture industry share of Montevideo's labor force, for example, dropped from 33 percent in 1970 to 23 percent in 1990. The sector service is the one that shows an increase in the last decades,

^{1/} Unemployment rates in urban Uruguay peaked in 1983 (14.7 percent of the labor force), since then they have been dropping to near 8.5 percent in 1990 (DGEC, 1991).

with a substantial part due to the expansion of the informal sector. The trend toward a service economy is likely to fuel a growing demand for better educated workers.

The educational profile of the workforce is in fact improving (Table 1). While those with no education, incomplete or completed primary dropped significantly, the population having secondary and university education has risen sharply. In fact, Uruguay has one of the better educated workforces in Latin America.

Table 1. Labor Force by Educational Level, Montevideo, 1969-90
(percentage)

Educational Level	1969	1975	1985	1987	1990
No education	2.3	1.5	1.1	0.7	0.6
Incomplete primary	20.1	17.7	13.4	10.5	9.7
Completed primary	37.2	35.2	25.6	25.7	23.4
Secondary 1st cycle	20.4	21.1	23.2	25.0	24.8
Secondary 2nd cycle	5.1	6.6	10.9	10.6	12.7
Vocational (UTU)	6.0	7.5	11.9	11.6	11.7
University	5.7	8.5	10.6	11.7	12.9
Other	3.2	1.9	3.3	4.2	4.1

Source: DGEC, *Encuesta de Hogares* of respective years.

Another aspect that has important linkages to educational development is the demographic profile of the country which resembles one of a developed country. The population growth rate has been extremely low (0.6 percent per year) in the last decade and as low as 0.2 percent a year during 1970-75, while the average level for Latin America has been 2.6 percent. Of particular relevance to the education sector is that population growth has been low not only because of low

natural growth but also due to net emigration); the number of school-age population (6-17 years) increased only from 609,000 to 642,000 between 1980 and 1990. Current life expectancy is 72.5 years, significantly higher than the 68.6 years observed 25 years ago. The low net reproduction and the high life expectancy produced an aging population, comparable to the one in developed countries.

Uruguay is a highly urbanized country. According to the 1985 population census, 86.2 percent lived in urban areas, maintaining the pattern that has existed at least since the 1960s when over 80 percent of the population was living in urban areas. This trend is expected to continue as the projections for 2000 indicate 91.1 percent will be living in urban areas.

II. The Education System

Uruguay has mandatory primary (six years) and lower secondary education (three years). Preschool education has developed recently, and around 40 percent of children aged three to five were covered in 1989. Primary education is universal. In fact, gross enrollment in primary is more than 100 percent and net enrollment reached 88 percent in 1988 (see Unesco, 1991). Repetition, however, is notorious, mainly in first grade where it reaches near 20 percent. Secondary education, which lasts six years, reaches around 60 percent of the school-age population. The first three years constitute the lower secondary education (*ciclo básico*), and upper secondary education is diversified offering two options: a general, and a technical-vocational curriculum. University education, that was solely provided by the government until

1984, has a coverage of about 2 percent of the (19-24) school-age population (up from the 0.4 percent in the 1960s).

Enrollment. During 1980-90 primary enrollment increased from 331,247 to 351,452, with public schools expanding from 277,018 to 294,910, respectively (see Table 2). Enrollment in secondary academic increased from 125,448 in 1980 to 204,198 in 1990, a more significant increase, partially explained because secondary education attendance became mandatory, and because of a change in educational emphasis from technical/vocational education that has kept a constant enrollment since 1983 (55,259 in 1983 and 56,084 in 1989). University enrollment doubled between 1973 and 1989 from 31,255 to 62,886.

Table 2. Enrollment by Level of Education, 1972-90

Educational Level	1972	1980	1989	1990
Primary	345	331	350	351
- Public	(285)	(277)	(296)	(295)
Secondary	145	125	197	204
- Public	(116)	(97)	(161)	(167)
Technical/vocational	36	43	56	n.a.
University	29	34	63	n.a.

Sources: For primary and secondary, *Departamento de Estadística de la División Planeamiento Educativo*, CODICEN. For Technical/vocational and University, DGEC, *Anuario Estadístico*.

n.a. = Not available

Expenditure. Public educational spending amounts to only 2.6 percent of GDP (an increase from the 2.0 percent in 1983), placing Uruguay among the countries with the lowest public educational spending in Latin America. The pattern of intra-sectoral allocation--out of the US\$211 millions of the 1989 public expenditures on education, 41 percent went to primary education, 23 percent to secondary academic, 12 percent to vocational and technical, and 21 percent to higher education (19 percent for university and 2 percent for teacher training).

Table 3. Public Expenditure on Education by Level, 1989

Level of Education	US\$ millions	Percent of total	Percent of GDP
Primary	86	41	1.1
Secondary	74	35	0.9
- Academic	(48)	(23)	(0.6)
- Technical/Vocational	(26)	(12)	(0.3)
Higher Education	44	21	0.5
- University	(40)	(19)	(0.5)
- Teacher Training	(4)	(2)	(0.0)
Other	7	3	0.1
Total	211	100	2.6

Source: *Ministerio de Economía y Finanzas* (Contaduría General de la Nación), MEF-CGN, *Budget Execution Statements*.

Significant cuts in total education spending took place in the early 1980s with a recovery by the end of the decade; overall, total education has grown in real terms. A comparison of expenditures in 1989 and 1980 shows that growth was relatively high in the public universities, less in secondary education and in technical-vocational education, and slightly negative in primary education (see Table 4).

Table 4. Public Expenditure on Education Index, 1980-89
(1984=100, in constant prices)

Educational Level	1980	1984	1989
Primary	141.6	100	136.8
Secondary	127.1	100	153.7
Technical/Vocational	131.7	100	136.7
University	137.8	100	202.0
Total	136.1	100	159.8

Source: *Ministerio de Economía y Finanzas* (Contaduría General de la Nación), MEF-CGN, *Budget Execution Statements*.

Unit cost estimates appear in Table 5. In 1989, the annual expenditure per primary student was, on average, US\$256, for secondary education US\$306, for technical-vocational US\$450, for teacher training US\$643, and for higher education it was US\$614. At this last level there is ample variation by field of study (i.e., while expenditure per student in agronomy was close to US\$2,000, in law, social sciences and economics it was between US\$200 and US\$300). For a detailed estimation of higher education costs, in particular costs per graduate, see Labadie, (1989).

Table 5. Unit Costs of Public Education by Level, 1984-90
(Current US\$/student)

Educational Level	1984	1985	1986	1987	1988	1989	1989*	1990
Primary	127	130	181	226	239	256	(154.9)	265
Secondary	168	172	225	261	279	306	(185.1)	285
Technical/Vocational	235	263	353	425	436	450	(272.2)	419
Teacher Training	231	310	542	639	743	643	(389.0)	795
University**	355	433	643	655	618	614	(371.5)	n.a.

Source: CODICEN. For university costs MEF-CGN.

* In 1989 Uruguayan pesos (in thousands).

** Excludes expenditures on the Hospital de Clínicas (however 50 percent of the salaries of teaching personnel were included in the expenditure). Average expenditure per student including Hospital de Clínicas is US\$896.

n.a. = Not available.

III. Labor Market and Education

One concern of education planners is the linkage between the educational system and the labor market, specifically the basic issue being the matching between the education system's output and the demand for educated labor. Two approaches are generally used to assess what would be externally efficient for the education system to produce: (a) manpower forecasting, (which, after decades of practice, has received repeated and sustained critique (see Youdi and Hinchliffe, 1985, and Psacharopoulos, 1991, and World Bank, 1991) and has subsided), and (b) labor market analysis. This later technique, that presents a more reliable guide for educational investment, is used in what follows.

Sample and data description.- The data used in this analysis are drawn from the 1989 *Encuesta Nacional de Hogares* conducted by the General Administration of Statistics and the Census (DGEC). The survey is based on a nationally representative household sample of 31,766 individuals conducted in urban areas. We selected those aged 14 to 65 with positive earnings from dependent employment (Y) (aggregate of all payments received from their wage employment and earnings).

Table 6 presents summary statistics of the main variables used in the analysis. Fifty-nine percent of the sample are male workers, and the average age is a little over 37 years. Years of schooling (S) was constructed in two ways. As a continuous variable by combining the individual's highest level of formal education attended and the last grade completed at that particular level, and as a string of dummy variables, indicating the fact that a person belongs to a respective level. If an individual repeated a grade, it is not reflected in our measures. With a mean of 8.61 years of education, the sample is a relatively well educated one, with an average worker almost having completed lower secondary education. One percent of the sample has no education, 38 percent has primary education, 35 percent has secondary education, 13 percent has some form of technical/vocational education, and 10 percent has higher education. Experience, constructed in the traditional Mincerian way ($\text{Age} - \text{S} - 6$) is 22.3 years. The number of hours worked per week is 45.5. The mean earnings per month is 150,680 pesos for each worker against 433,800 pesos average household income. With almost one in three workers in the public sector, Uruguay presents a case of a large public sector.

Table 6
Mean Sample Characteristics

Variable	Mean	Std. Dev.
Urban resident	.98	.15
Male	.59	.49
Age	37.01	12.88
Part-time Students	.06	.24
Years of Schooling	8.61	3.58
Illiterate	.01	.09
Primary education	.38	.49
Lower education	.24	.43
Upper secondary	.11	.31
Vocational/Technical	.13	.33
Teacher training	.03	.18
University	.10	.30
Private sector employee	.66	.47
Public sector employee	.29	.45
Years of experience	22.27	13.92
Hours worked per week	45.48	15.67
Earnings (000 pesos/month)	150.68	126.22
Total household income (000 pesos/month)	433.80	509.84

Source: Uruguay Household Survey, 1989. Persons with positive earnings from dependent income.
N - 9,417

Table 7 presents mean earnings of selected variables by gender and sector of employment. The sharpest earnings differentials are due to education, closely followed by gender, and then by sector of employment. Portes, Blitzer, and Curtis (1986) also found that gender, but mainly education, have significant additive effects on income. In their study,

employment status (defined as formal worker, informal worker, and informal employer), has the strongest effect on income. Workers with higher education experience (including dropouts) earn about 2.7 times more than illiterates, 1.9 times more than those who have primary education, and 1.5 times more than those who have secondary education.

Males, on average, earn about 60 percent more than females. Gender earnings differentials are particularly large among illiterates, with male illiterates earning about 2.2 times more than female illiterates, but also among workers with higher education experience, in which category males earn 1.8 times more than females. This last finding is partially explained by the fact that in the last decades Uruguay is the only Latin American country where female enrollment has decreased in careers conducive to high salaries (like engineering) at the same time that female enrollment has increased in careers conducive to low salaries like social sciences (see Schiefelbein and Peruzzi, 1991).

Earnings differentials between public and private workers follows the pattern observed in Latin American countries. With the exception of upper secondary and university education, the public sector offers higher pay relative to the private sector.

Figure 1 presents the age-earnings profiles by level of education. In spite of the saw-tooth pattern because of the low number of observations within each education-age cell (especially regarding older people with higher education), the level and growth of earnings in Uruguay is very similar to that observed elsewhere in the world.

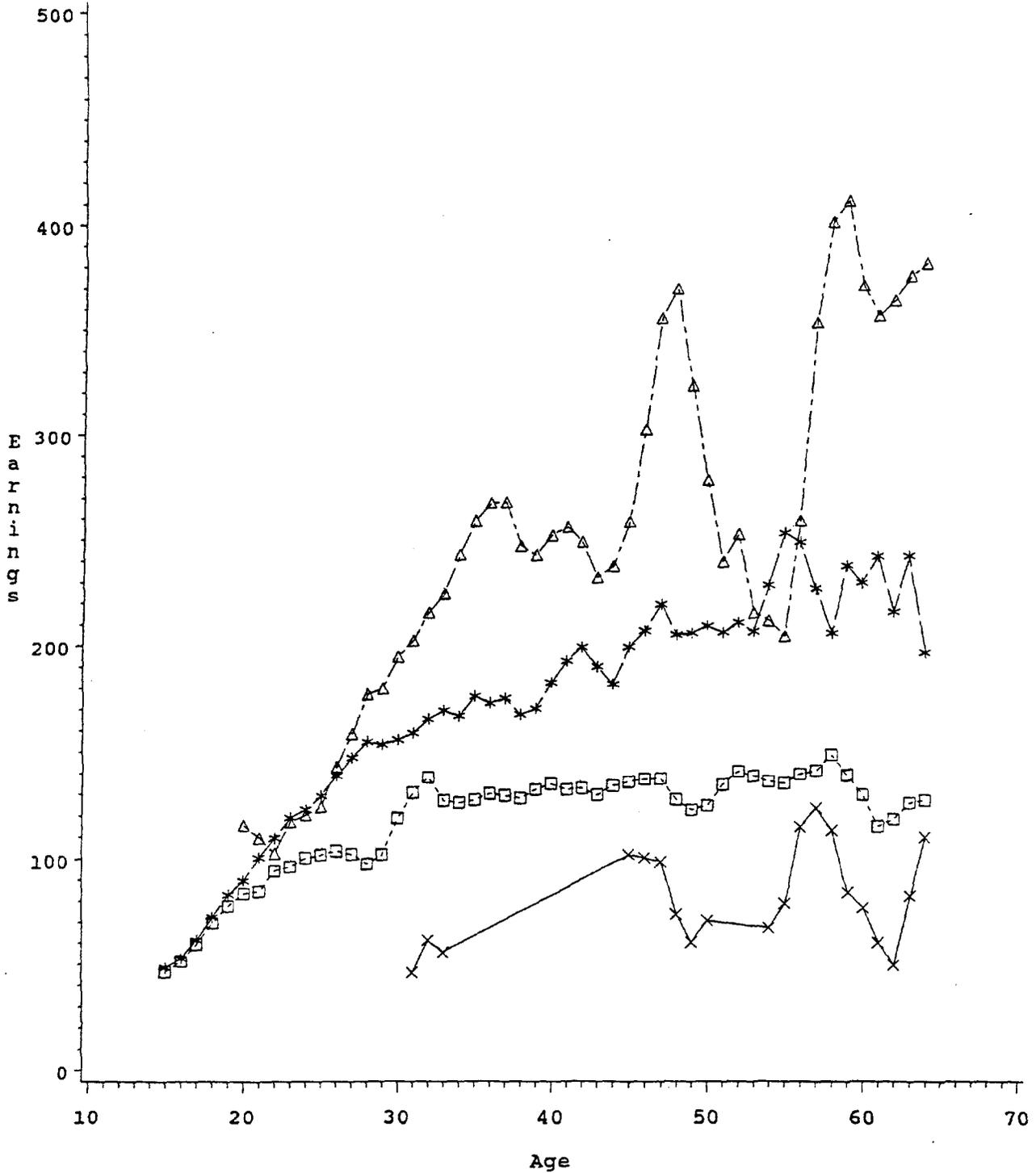
Table 7
Mean Earnings by Educational Level
(in thousand Pesos per month)

Educational Level	Entire Sample	Gender		Economic Sector		Mean S	N
		Male	Female	Private	Public		
Illiterates	85	120	55	86	118	0.0	83
Primary	122	144	83	117	144	5.2	3,589
Secondary	154	181	112	151	165	9.4	4,525
- Lower	149	178	109	144	164	9.1	2,270
- Upper	169	222	125	174	162	10.7	1,027
Tech/Voc (UTU)	148	162	93	144	160	8.9	1,194
Higher	228	312	169	277	190	15.6	1,220
University (URU)	252	319	181	294	210	15.6	910
- Teaching	158	226	149	162	158	15.8	310
Overall	150	177	112	147	164	8.6	9,417

Note: Educational categories include dropouts of the respective level.

Figure 1.

Age – Earnings Profiles by Educational Level (3 – year Moving Average)



Exploring earnings variation.- Table 8 reports Mincerian earnings functions (Mincer, 1974)^{2/} fitted to the sample as a whole and by gender and by economic sector. Column (1) is the classical specification which includes the continuous years of schooling and experience variables. We have also included the logarithm of hours worked per week as a compensatory factor. The sign of the coefficients of the first specification conform with human capital theory and the explanatory power of the model (40.4 percent of the variance^{3/}) is consistent with previous research in the Latin American context. The negative sign of the squared term for experience reflects the concave age-earnings profiles.

Mincerian Rates of Return

The rationale for restricting the last regression to private sector males is in order to gain some insight to approximate the returns to education in the competitive sector of the economy (assuming that in the private sector earnings would be closer to the productivity of the employee relative to the public sector), and in order to eliminate effects of possible discrimination against females in the labor market. In addition, the Mincerian experience variable for females is not

^{2/} The standard Mincerian function is

$$\ln(Y) = a + bS + cEX + dEX^2 + e\ln(H) + U,$$

where: Y = monthly labor earnings,
S = years of formal schooling,
EX = years of working experience,
H = hours worked per week,
U = error term.

^{3/} The explained variance of the models range from 29.8 percent for the public sector to 43.5 percent for private sector male workers.

as good a measure for their actual labor market experience because of work interruptions for family reasons. For the Uruguayan case see Arends (1991).

The coefficients of the years of schooling variable in columns (1) to (5) in Table 8, and the differences between successive education dummy coefficients in column (6) give us a first glimpse on the returns to education in Uruguay, either referring to a typical extra year of education, or to specific educational levels. These are summarized in Table 9. The overall Mincerian rate of return (which is private by construction) is 9.2 percent. This value is typical of that in advanced countries over the last 20 years. Females enjoy a one percentage point advantage over males -- another typical result in most countries. What is of extreme importance is the fact that the returns in the private sector of the economy exceed those in the public sector by almost 5 percentage points. Such finding, as elsewhere, gives confidence on the productive role of education in the sense that no private employer would maintain in the payroll more educated people if their wages did not somehow correspond to increased productivity.

Among the different educational levels, lower secondary (which in this case is the last cycle of compulsory basic education exhibits the highest rate of return, 13.1 percent. The returns thereafter drop by the level of further education, the lowest being those for teacher training (negative). Secondary technical vocational education exhibits a very low rate of return of 1.4 percent, which is significantly lower than what has been found elsewhere (for the Venezuelan case see Fiszbein and Psacharopoulos, 1992).

Regarding teachers, they receive a very low premium, as in most Latin American countries, and this may be attributed to the part-time nature of their profession.^{4/} In a recent census (*Censo Nacional de Docentes de Educación Media*) for example, only one in three teachers mentioned that his/her salary as a teacher was the main source of family income (see CODICEN, 1990). Perhaps teachers enjoy non-monetary rewards we were not able to capture in the income variable (e.g., free housing). One should also note the high unit cost of teachers' education due to the declining enrollments in normal schools (enrollments declined from 5,287 in 1985 to 2,361 in 1990). This has resulted in underutilized human and physical capacity in the normal school; some normal schools currently have enrollments as low as 20 students with a capacity to attend 200 students or more.

^{4/} According to the survey, teachers work on average 33.5 hours per week, whereas other professions work between 43 and 49 hours per week.

Table 8
Mincerian Earnings Functions

Variable	Entire Sample	Gender		Economic Sector		Private Sector Males
		Males	Females	Private	Public	
Constant	.352	1.348	.460	-.103	1.934	1.934
Years of Schooling (S)	.092	.091	.102	.109	.060	
Experience (EX)	.045	.056	.041	.050	.030	.069
EX-squared	-.0006	-.0007	-.0006	-.0007	-.0003	-.0001
Log Hours	.803	.551	.715	.873	.530	.642
Primary (Base)*						.000
Lower Secondary*						.394
Upper Secondary*						.688
Technical/Vocational (UTU)*						.352
Teacher Training*						.471
University (URU)*						1.158
R ²	.404	.388	.418	.434	.298	.435
N	8,623	5,064	3,560	5,865	2,562	3,313
Mean S	8.7	8.3	9.2	8.1	9.6	8.1

Note: All coefficients are statistically significant at the 1% level or better.

* Dummy Variables

Regarding technical/vocational education, the low returns must reflect current scarcities in the labor market. Sapelli (1988) shows that the stagnation of the manufacturing sector had adverse implications for job opportunities for UTU graduates. He also notes that enrollment in private sector training programs was increasing, probably as the result of a decline in quality of UTUs programs.

The figures shown in columns (2) and (3) indicate that private rate of returns are higher for females (10.2 percent versus 9.1 percent) even though females earn less. This finding has been consistently found in the literature (Psacharopoulos, 1985) and it is due to the lower foregone earnings of females. It has also been reconfirmed in the case of Uruguay (Arends, 1991). Experience however is more rewarded for males. In column (4) and (5) the results by economic sector indicate that the returns to education are significantly higher in the private sector (10.9 percent) than in the public sector (6.0 percent). This result supports the productivity-enhancing role of education since the more competitive sector is rewarding more the more educated workers. Also consistent with previous analysis is that returns to experience (i.e., growth of earnings) are lower in the public sector.

Finally, column (6) is an expanded earnings function for public sector males- where schooling is disaggregated into a series of dummy variables to estimate returns to investment in the various levels of education. The results of the modified specification are consistent with the previous pattern. Although returns continue to rise with educational level the trend is not smooth (i.e., returns to male teachers in the private sector are lower than for workers with secondary education).

Full method. The number of observations available in this sample permit us to also estimate the returns to education using the discounting formula, i.e. finding the interest rate that brings the discounted actual (and non-regression-smoothed) net age-earnings profiles equal to zero. In such case we can also add the social cost of providing education at a given level to the beginning of the age-earnings profiles and thus estimate the rates of return from the social view point.

Table 9
Mincerian Returns to Education
(percent)

Reference	Private Rate of Return (percent)
<u>Gender</u>	
Males	9.1
Females	10.2
<u>Economic Sector</u>	
Private	10.9
Public	6.0
<u>Private Sector Males by Educational Level</u>	
Lower secondary (vs. primary)	13.1
Upper secondary (general) (vs. lower secondary)	9.8
(vs. primary)	11.5
Technical/Vocational (UTU) (vs. lower secondary)	1.4
(vs. primary)	5.9
Teacher Training (vs. upper secondary)	negative
University (vs. upper secondary)	9.4

The results appear in Table 10. As elsewhere, primary education exhibits the highest rate of return, secondary education a lower rate, and university education the lowest rate among the three main levels. Within secondary education, the technical field exhibits a lower rate of return relative to general education. As already found with the Mincerian method, teacher training shows a negative return.

Table 10

The Returns to Education -- Full Method
(percent)

<u>Educational Level</u>	<u>Private</u>	<u>Social</u>
Primary (vs. illiterate)	19.1	15.2
Secondary (vs. primary)	9.8	8.0
- General	11.4	8.5
- Technical/Vocational (UTU)	8.2	6.2
Teacher Training (vs. secondary)	negative	negative
University (URU) (vs. secondary)	8.1	6.5

Unemployment

One issue is how education relates to the chance people have to be unemployed, and once unemployed how long they have to wait for finding a job. In order to answer these questions we worked with a larger sample from the household survey that includes not only those who are employed for labor earnings (used in the above analysis), but also those who are unemployed and are looking for a job. This sample in fact corresponds to the definition of the 14-65 years economically active population or labor force.

The overall unemployment rate at the time of the survey was 5.7 percent. But as shown in Table 11, the level of education a person has relates to his/her chance to be unemployed. Illiterates have the highest unemployment rate (7.9 percent), followed by lower secondary school graduates. Upper secondary school graduates have about the same unemployment rate than secondary technical graduates, 6.6 and 6.2 percent respectively. Confirming a pattern observed

at least since the mid 1980s teachers have the lowest unemployment rate (1.2 percent). Due to the above mentioned decline in normal school enrollment only around 500 new teachers graduate from normal schools every year. This number is relatively small to replace the teaching working force that on average has been in the education system for more than 16 years (the retirement rate is relatively high).

The second column in Table 11 refers to the sub-population of those in the labor force who are either unemployed or are looking for work. The mean waiting time among this group is 31 weeks. But as shown in Table 11, there is strong differentiation by level of education. University graduates seem to search longer than any other group. This could be partially explained by the ability of higher income families, who are over-represented among the university-educated, to support their children until they find a suitable job. It also reflects the low cost of attending university.

The last two columns of the table show that the average number of weekly hours by the urban labor force was 42.6 (45.5 including total jobs), with teachers and illiterate people working less and secondary technical graduates working more. It is very difficult with the data in hand to determine the extent to which the observed incidence and length of unemployment is involuntary (genuine joblessness) rather than reflecting job search, i.e. people voluntarily remaining unemployed in order to improve the wage offer they will get. Although some voluntary unemployment could be attributed to the university graduates, this theory would be very hard to support regarding those with lower levels of education.

Table 11

Unemployment Characteristics of the Active Population by Educational Level

Educational Level	Unemployment Rate (percent)	Looking for Work (weeks)	Average Weekly Hours in	
			Primary Job	All Jobs
Illiterate	7.9	26.6	38.8	40.1
Primary	5.0	26.9	44.3	46.0
Lower Secondary	7.2	30.1	43.6	46.0
Upper Secondary	6.6	32.5	41.1	43.5
Secondary Technical (UTU)	6.2	29.4	45.8	49.1
Teacher Training	1.2	25.0	28.5	33.2
University (URU)	3.8	44.9	36.6	44.1
Overall	5.7	30.6	42.6	45.5
(N)	(13,600) ^{a/}	(1,001) ^{b/}	8,650	8,667

^{a/} Population 14-65 years old, employed, unemployed, or looking for work for the first time.

^{b/} Unemployed or looking for work.

Equity

The above analysis referred exclusively to efficiency issues in the labor market, i.e. how education relates to employment and the earnings of those who have been educated. With the data set in hand it is possible to expand the analysis to equity issues by concentrating on a different sub-sample: those who are 10 years old and above and report themselves as being students. The household survey contains 5,129 such persons the characteristics of which appear in Table 12.

The mean age of the different student groups documents the extent of grade repetition in the Uruguayan system of education, e.g., whereas the mean official age of those who are in upper secondary education should be 17 years old, the mean actual age of the group is 20. The same applies to university students, their actual mean age being 25 against an official age of about 21.

Column (2) in Table 12 shows the mean household income of the respective student groups. There is a distinct pecking order with those who attend university having double the family income of those who are in primary education. It is also of extreme interest that the mean household income of those who study technical/vocational subjects is the lowest among all groups. In Uruguay, as elsewhere, technical/vocational education is for the poor.

The respondents were asked whether they contribute payments in the school they currently attend. The figures shown in the last column of Table 12 show an amazing stratification of the incidence of paying by level of education. Those attending primary and lower secondary schools are more likely to contribute for their education, whereas only one tenth of one percent contribute to their university education. This is prima facie evidence on the inequity of the present education financing arrangements in Uruguay.

Table 12
Characteristics of the Student Population

Educational Level	Age	Household Income/month (000 Pesos)	Fee Paying Student (percent)	N
Primary	11.9	380	12.6	2,209
Lower Secondary	15.3	472	17.0	1,661
Upper Secondary	20.0	552	9.9	518
Secondary Technical (UTU)	18.6	339	0.0	262
Teacher Training	23.6	485	2.9	34
University (URU)	25.1	665	0.9	445
Overall	15.4	450	12.1	5,129

V. Educational Investment Priorities

The above results are signals as to where resources for education could be used most profitably at the margin. The expansion of primary education should be priority number one. It is reminded that in spite of the gross enrollment ratio of more than 100 percent, the net enrollment ratio was only 88 percent in 1987. Although both, private and social rate of return are somewhat lower than the average found for Latin American countries (see Psacharopoulos, 1985), they are high enough to indicate the high priority that should be given to investment in this sub-sector. The expansion of primary education is also good for equity purposes.

General secondary education also exhibits a sizeable social rate of return indicating that there is room for expansion. The relatively low social rate of return to technical/vocational secondary education is a red flag regarding further expansion of this level, especially in its

present form. Perhaps the quality or "relevance" is bad. We were not able to differentiate by specialty. This needs further investigation. It is recommended that systematic analysis of labor market information together with tracer studies be used to improve the imbalances between the technical schools and the labor market.

The overall social rate of return of 6.5 percent regarding university education, similar to that in countries such as the United States, indicates that the country might have reached equilibrium regarding this level of education. The preceding macro-analysis indicates that higher education may not be an investment priority. The negative rate of return to teacher training requires further investigation.

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