Teachers’ Salaries and Professional Profile in Mexico

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Abstract

Teachers’ salaries have often been highlighted as very important issue in discussions of school improvement. The level and structure of teacher remuneration affect morale and ability to focus on and devote adequate time to teaching. This paper examines who teachers are, whether teachers are underpaid, and whether teachers face higher compensation uncertainty than their counterparts face. The results show that that teachers in basic education consistently work fewer hours than their occupational counterparts. Regression analysis shows that teachers in basic public schools are better paid early in their professional lives than are other comparable individuals. Because retirement benefits are usually generous, teachers stay within the profession.

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## MAIN ABBREVIATIONS & ACRONYMS

| Acronym | Full Name | Description |
|---------|-----------|-------------|
| ANMEB   | National Agreement for the Modernization of Basic Education (Acuerdo Nacional para la Modernización de la Educación Básica) |
| ENIGH   | National Household Survey of Income and Expenditures (Encuesta Nacional de Ingresos y Gastos de los Hogares) |
| ENEU    | National Urban Employment Survey (Encuesta Nacional de Empleo Urbano) |
| INEGI   | National Institute of Statistics, Geography, and Information (Instituto National de Estadística, Geografía e Informática) |
| SEP:    | Ministry of Education (Secretaria de Educación Pública) |
| SNTE:   | National Union of Education Workers (Sindicato Nacional de Trabajadores de la Educación) |
1. INTRODUCTION

Good quality of education is critical in the new era of global competition and technological change. Mexico’s future development depends on the ability to take advantage of new opportunities quickly and decisively. Good basic education that is accessible to all is necessary for a sustainable, poverty-reducing development strategy.

This paper and two companion papers\(^1\) examine teachers’ incentives and professional development in Mexico, in pursuing the long-term goal of improving student learning and performance. Such incentives include non-monetary benefits offered to teachers as extrinsic motivators and monetary benefits. Direct monetary benefits include salary and allowance offered to teachers. Indirect monetary benefits include all other resources provided to teachers. Measures of professional support include training, teacher’s guides, didactic material, instructional supervision and monetary incentives. Non-monetary incentives refer to parents and students’ perception of the teacher’s work, choice of location for a teacher’s next assignment and work recognition.

This paper is divided into the following sections: the Background succinctly places objectives of the Introduction in context. Section 3 describes the data. Section 4 compares teachers to other professions. Section 5 analyses public and private teachers’ income structure and professional profile with respect to other groups to determine whether teachers are underpaid or overpaid. Section 6 offers conclusions.

2. BACKGROUND

Mexico is a federal country with a population of almost 97.4 million people spread unevenly over nearly 2 million square kilometers. About three-fourths live in urban areas. The country is relatively young—twenty-four percent of the population is between 5-14 years old. The share of this age group in the total population is the highest among OECD countries, which have an average of about 14 percent. The recent pace of demographic growth has been dropping dramatically. As a result, the population under 6 years old has been decreasing at the rate of 0.5 percent a year, while the 6-14 age group has been increasing by no more than 0.1

\(^{1}\) Lopez-Acevedo and Salinas (2000a) Professional Development and Incentives for Teacher Performance in Schools in Mexico. The World Bank Mimeo. Lopez-Acevedo and Salinas (2000b) Factors that Affect Learning Achievement in Mexico: The Case of Mexico D.F., Nuevo Leon and Tabasco. The World Bank. Mimeo.
percent a year. By the end of the century, the total number of persons in this age group will have virtually stabilized.

Within the Mexican education system, basic education is the government’s highest priority. The basic education system consists of: (a) early childhood education (or pre-school), which is optional for children 3 to 5 years old; (b) mandatory primary education, ideally from ages 6 to 12, but due to late enrollment and grade repetition targeted to ages 6 to 14, and (c) mandatory lower secondary school, consisting of a 3-year cycle, and intended for children ages 12 to 16.

This system has become highly centralized in the hands of the Federal Government. This centralization is reflected by the growing share of Federal schools in total enrollment, which rose from 64 percent in 1970 to 72 percent in 1990. In May 1992, however, the states, the federal government structures, and the National Union of Workers in Education (Sindicato Nacional de Trabajadores de la Educación, SNTE) signed the National Agreement for the Modernization of Basic Education (Acuerdo Nacional para la Modernización de la Educación Básica, ANMEB). This agreement was created in response to demand for a decentralized educational system. This agreement should allow states to have more participation. Previous attempts to decentralize the educational system have failed due to constraints on states and federal government structures and to the opposition of the SNTE. ANMEB is part of a long process that yielded satisfactory results through May 1992, when the Federal Government, State Governors, Federal agencies and the SNTE signed the agreement.

In this context, the federal government modified its educational discourse, placing more emphasis on the quality of educational content instead of the previous focus on educational coverage. Carrera Magisterial was created as part of the ANMEB in 1992. It was aimed to raise the quality of basic public education through: (a) teachers’ professional training; (b) new learning presence in schools; and (c) improving working conditions. It represents an effort on the part of the government to provide better support for and recognition of the valuable work of teachers. One component of Carrera Magisterial is the training of teachers; another is a merit payment system in which professional staff on a voluntary basis are evaluated and rewarded with

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2 The impact of Carrera Magisterial is examined in Lopez-Acevedo and Salinas (2000a) Professional Development and Incentives for Teacher Performance in Schools in Mexico. The World Bank Mimeo. Lopez-Acevedo and Salinas (2000b) Factors that Affect Learning Achievement in Mexico: The Case of Mexico D.F., Nuevo Leon and Tabasco. The World Bank. Mimeo.

3 The Carrera Magisterial Program, which has several parts, is governed by the Comisión Nacional Mixta consisting of officials of the Ministry of Education (Secretaría de Educación Pública, SEP) and SNTE.
salary increases for their performance as classroom teachers, school directors, supervisors and technical-administrators. Teacher evaluation is based on performance (35 points), experience (10 points), professional skills (25 points), educational attainment (15 points) and completion of accredited courses. There are five levels of promotion ("A", "B", "C", "D", "E"). The salary rewards allocated to each one of these levels represent an increase but do not represent a change in post assignment. The promotion ladder attaches considerable importance to seniority within Carrera Magisterial, rural posts or teaching in under-developed areas. Promotion within Carrera Magisterial is complex because of the different levels (escalafones).

Government is the dominant provider of basic educational services. It owns close to 91 percent of primary and secondary schools, which account for 90 percent of total enrollment. At the university level, however, the private sector plays a much bigger role, accounting for close to half of the enrollment (46 percent). The educational system in Mexico is now so extensive that there are over 483,000 schools (excluding preschools) staffed by over a million teachers, of which 84.3 percent are in public schools.

In 1999, public schools teachers held 43 percent of total government positions. All teachers in basic public education are affiliated with SNTE. All teachers in upper secondary and tertiary education have a union or are independent (in Autonomous or State Universities).

3. The Data

The National Household Income and Expenditures Survey (Encuesta Nacional de Ingresos y Gastos de los Hogares, ENIGH) is collected by the National Institute of Statistics, Geography, and Information (Instituto Nacional de Estadística, Geografía e Informática, INEGI). This survey is available for 1984, 1989, 1992, 1994 and 1996. Each survey is representative at national level, and distinguishes urban from rural areas. The annex shows the sample sizes of this survey. The ENIGH surveys identify several variables such as educational attainment, personal income and number of hours-worked per week by family member. Total income is aggregated into eight broad categories: i) labor earnings; ii) income from self-employment; iii) property income and rents; iv) monetary transfers; v) other current income; vi) monetary and non-monetary financial income; and vii) non-monetary income such as imputed rent, in-kind transfers, gifts and auto-

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4 The share of public school enrollment is about 94 percent (primary), 93 percent (lower secondary) and 78 percent (upper secondary).
consumption.

The National Urban Employment Survey (Encuesta Nacional de Empleo Urbano, ENEU) is also a micro-leveled data set collected by INEGI. It contains quarterly wage and employment data of the last twelve years (1987-1999). Currently, the data is representative of the 41 largest urban areas in Mexico. It covers 61 percent of the urban population (2500 inhabitants or more) and 92 percent of the metropolitan population (100,000 or more inhabitants).

The data is from household surveys, which fully describe family composition, human-capital acquisition and experience in the labor market. The variables contain information about social household characteristics, activity condition, position in occupation, unemployment, main occupation, hours-worked, earnings, benefits, secondary occupation, and job search. The sampling design was stratified into several stages (where the final selection unit is the household) with proportional probability to size. This statistical construction allows us to compare different years.

4. Teacher’s profile with respect to other occupational groups—A descriptive analysis

Definitions

“Teacher” refers to all individuals whose main occupation is public or private instruction. A combination of descriptive statistics is used to examine the income structure and professional profile of basic school teachers with respect to other occupational groups. In this paper, teachers were divided by the level they taught by urban-rural location, and by public-private school status. Following other authors, several occupational groups were chosen in order to provide a yardstick for comparing teachers’ salary structure and professional profile.

From the ENIGH survey, occupational groups included people employed in agriculture, fishing and forestry (the agricultural group), and people employed in low-skilled activities such as street vendors and servants (the low-skilled group). The mixed-skilled group includes professionals; technicians; artists, and sportsmen; managers and directors in the public as well as in the private sector; managers and workers in the

5 Federal, State plus Autonomous schools teachers.
manufacturing industry; administrative workers, and workers in the service sector. The criteria for constructing the latter group was a set of possible alternative occupations available to the teacher.

In addition to the mixed-skilled group, ENEU allows us to construct a group based on a comparable teacher's educational background. Thus, two groups were added to the previous comparable group definitions: those individuals who have Upper Secondary Education but are not teaching (Upper Secondary in Education not teaching) and those individuals who have a B.A. in education but are not teaching (University degree in Education not teaching). The annex provides a detailed description of these groups.

**Formal years of schooling, age and gender**

The teacher years of schooling were computed as the total number of formal years of education reported. Tables 1a, 1b and 2 show that in urban areas, teachers have more years of schooling than other groups do, such as the low skilled group and the agricultural group, but teachers have less years of education than other professionals with a B.A in Education not teaching. In urban areas, the teachers' average years of schooling increased by 2 years from 1988 to 1999. The distribution of teachers' years of schooling in basic education is less dispersed compared to the mixed-skilled group. By region, average teachers' years of schooling in basic urban schools is similar to those in rural areas. However, there is a difference that increases with the level of instruction. Basic education teachers have on average 14 years of formal schooling, which is just below OECD countries (16 years) but slightly above other Latin American countries (12 years).

| Table 1: Years of Schooling in Urban Areas |
|------------------------------------------|
| 1988 | 1994 | 1999 |
| Type of Occupation | Mean | Median | S.D. | Mean | Median | S.D. | Mean | Median | S.D. |
| Primary Teacher in Public School | 12.6 | 11.0 | 3.9 | 14.0 | 14.0 | 3.0 | 14.6 | 17.0 | 2.9 |
| Primary Teacher in Private School | 12.5 | 11.0 | 2.2 | 14.3 | 17.0 | 3.0 | 14.4 | 15.0 | 2.9 |
| Lower-Secondary Teacher in Pub. School | 14.7 | 16.0 | 2.8 | 15.9 | 17.0 | 4.1 | 16.2 | 17.0 | 3.5 |
| Lower-Secondary Teacher in Priv. School | 14.1 | 15.0 | 2.5 | 15.6 | 17.0 | 2.4 | 15.2 | 17.0 | 2.9 |
| Upper-Secondary Teacher in Pub. School | 16.4 | 17.0 | 1.3 | 16.2 | 17.0 | 2.2 | 16.7 | 17.0 | 2.0 |
| Upper-Secondary Teacher in Priv. School | 15.8 | 16.0 | 1.7 | 17.3 | 17.0 | 9.3 | 16.7 | 17.0 | 1.6 |
| University Teacher in Public School | 17.0 | 17.0 | 1.5 | 17.6 | 17.0 | 1.2 | 17.6 | 17.0 | 1.5 |
| University Teacher in Private School | 17.0 | 17.0 | 1.2 | 17.6 | 17.0 | 4.9 | 17.4 | 17.0 | 1.6 |
| Prof. With Upper-Secondary in Education not teaching | 11.1 | 11.0 | 0.6 | 11.3 | 11.0 | 0.9 | 11.3 | 11.0 | 0.9 |
| Prof. With an University degree in Education not teaching | 18.4 | 18.0 | 0.5 | 17.0 | 17.0 | 0.0 | 17.0 | 17.0 | 0.0 |
| The mixed-skilled group | **9.0** | **9.0** | **4.5** | **9.5** | **9.0** | **4.8** | **9.9** | **9.0** | **4.5** |
| The agricultural group | 4.8 | 4.0 | 4.2 | 5.6 | 6.0 | 4.2 | 6.1 | 6.0 | 4.5 |
| The low-skilled group | 6.2 | 6.0 | 3.6 | 6.6 | 6.0 | 3.7 | 6.9 | 6.0 | 3.7 |

Source: Own calculations based on ENEU survey
Tables 2 and 3 show that public primary urban teachers and public lower-secondary rural teachers are older than teachers of higher levels. Basic public education teachers are older than their counterpart in private schools. Primary school teachers are as old as agricultural workers. Moreover, this group tends to be older on average than the mixed-skilled group but younger than the Professionals with a B.A in education not teaching. The largest group of public school teachers is from 37 to 41 years old. When this group retires, shortages could be expected.

### Table 2: Worker's Profile based on ENIGH96

| Type of Occupation                      | Age | Years of Schooling | Women Share % |
|-----------------------------------------|-----|--------------------|---------------|
|                                         | Urban | Rural | Urban | Rural | Urban | Rural |
| Primary Teacher in Pub. School          | 39.0  | 32.9  | 14.1  | 14.4  | 72.3  | 65.3  |
| Primary Teacher in Priv. School         | 35.1  | n.d.  | 14.1  | n.d.  | 94.9  | n.d.  |
| Lower Secondary Teacher in Pub. School  | 36.7  | 41.5  | 15.5  | 13.5  | 38.4  | 23.7  |
| Lower Secondary Teacher in Priv. School | 34.1  | n.d.  | 14.8  | n.d.  | 57.6  | n.d.  |
| Upper Secondary Teacher in Pub. School  | 36.5  | 27.7  | 15.4  | 15.1  | 42.5  | 63.5  |
| Upper Secondary Teacher in Priv. School | 34.7  | n.d.  | 15.4  | n.d.  | 66.4  | n.d.  |
| University Teacher in Pub. School       | 38.0  | n.d.  | 17.5  | n.d.  | 34.5  | n.d.  |
| University Teacher in Priv. School      | 38.9  | n.d.  | 16.1  | n.d.  | 31.0  | n.d.  |
| The mixed-skilled group                 | 34.1  | 32.9  | 8.9   | 5.7   | 32.8  | 37.2  |
| The agricultural group                  | 41.0  | 35.9  | 4.2   | 3.7   | 19.6  | 23.2  |
| The low-skilled group                   | 35.6  | 34.1  | 6.2   | 4.4   | 49.4  | 58.0  |

n.d.: No data in the survey

Source: Own calculations based on ENIGH96 survey

### Table 3. Age by Occupation in Urban areas

| Type of Occupation                                         | 1988 |       |       | 1994 |       |       | 1999 |       |       |
|------------------------------------------------------------|------|-------|-------|------|-------|-------|------|-------|-------|
|                                                            | Mean | Median| S.D.  | Mean | Median| S.D.  | Mean | Median| S.D.  |
| Primary Teacher in Public School                           | 33.9 | 32.0  | 9.6   | 36.4 | 35.0  | 7.8   | 39.5 | 38.0  | 8.6   |
| Primary Teacher in Private School                         | 31.4 | 27.0  | 11.7  | 34.9 | 33.0  | 9.1   | 36.2 | 35.0  | 10.7  |
| Lower-Secondary Teacher in Pub. School                    | 38.1 | 39.0  | 9.1   | 37.8 | 36.0  | 9.1   | 39.2 | 39.0  | 9.1   |
| Lower-Secondary Teacher in Priv. School                   | 28.4 | 28.0  | 5.8   | 34.1 | 33.0  | 9.1   | 37.2 | 37.0  | 10.5  |
| Upper-Secondary Teacher in Pub. School                    | 36.2 | 35.0  | 10.5  | 37.4 | 36.0  | 9.2   | 41.0 | 41.0  | 9.6   |
| Upper-Secondary Teacher in Priv. School                   | 33.6 | 30.0  | 9.2   | 33.4 | 31.0  | 9.2   | 37.1 | 36.0  | 9.5   |
| University Teacher in Public School                       | 39.7 | 38.0  | 10.1  | 42.9 | 41.0  | 12.2  | 45.0 | 46.0  | 11.4  |
| University Teacher in Private School                      | 29.9 | 26.0  | 9.7   | 41.7 | 39.0  | 11.7  | 36.6 | 36.0  | 11.0  |
| Professionals with Upper-Secondary in Education not teaching | 34.1 | 31.0  | 10.0  | 40.4 | 39.0  | 11.5  | 40.8 | 40.0  | 12.7  |
| Professionals with a University degree in Education not teaching | 36.6 | 38.0  | 5.1   | 39.9 | 38.0  | 10.3  | 40.3 | 39.0  | 9.9   |
| The mixed-skilled group                                   | 33.2 | 30.0  | 12.9  | 33.2 | 31.0  | 12.5  | 34.0 | 32.0  | 12.5  |
| The agricultural group                                    | 43.4 | 43.0  | 16.7  | 42.8 | 42.0  | 16.9  | 43.9 | 43.0  | 16.1  |
| The low-skilled group                                     | 36.1 | 34.0  | 14.9  | 34.2 | 32.0  | 14.8  | 35.7 | 34.0  | 14.7  |

Source: Own calculations based on ENEU survey
Table 3 in the Annex shows women’s share and number of children in urban areas. From this table, it follows that a large majority of teachers at primary and lower-secondary school levels are female both in urban and rural areas. At the upper secondary school level, men and women are equally represented. Only a third of the teachers at the tertiary school level are female. While a large share of the teaching labor force is female, less than a third work in other occupations or in agricultural activities. More than half of the Professionals with an University Degree in Education not teaching are females. Female teachers' salaries can be a primary source of income for the family, since 24 percent of female teachers in primary public schools are household heads. Fourteen percent of the females in the mixed-skilled group are household heads.

**Hours-worked**

“Teaching time” is sometimes used as a proxy indicator of the workload of a teacher. Based on the ENEU, Tables 4 and 5 in the Annex show weekly working hours and adjusted weekly working hours (two month vacation) for 1988, 1994 and 1999, public and private teachers and other counterparts. Teachers have worked substantially less number of hours than Professional with a B.A in Education not teaching.

Working hours did not substantially increase from 1988 through 1999 (Fig. 1). The teacher group has worked consistently less than their counterparts. Additionally, the mixed-skilled group exhibits a higher variation in the number of hours-worked through time. Primary public school teachers work fewer hours than primary private school teachers. These trends become even more pronounced when using adjusted weekly working hours.
Based on ENIGH, the main and secondary occupations listed on Table 4 show hours-worked, adjusted hours-worked and the total number of hours-worked by region. Figure 2 shows that hours-worked vary across school levels, sectors and regions. Public primary school teachers work an average of 32 hours per week, while those in private schools work on an average of 34 hours. Public and private primary school teachers work significantly less than their counterparts. This pattern changes in lower and upper secondary school level, since public school teachers work more hours on average. On the other hand, university teachers in public schools and the mixed-skilled group work an average of 47 hours per week, while people employed in the agricultural group or the low skilled group work on an average of 43 hours per week. There is not a significant difference in the weekly hours-worked between public school teachers in urban areas and those teachers in the rural areas. In sum, total hours-worked for the Professionals with a B.A in Education not teaching, the mixed-skilled group, the agricultural group and the low-skilled group is higher than the total hours-worked for teachers of basic education. This result also holds true in urban and rural regions.
As mentioned above, teachers work fewer hours than the other occupational groups. It is relevant to examine how many hours on average teachers devote to their secondary occupation. Table 4 shows the secondary occupation shares by occupational categories, or the percentage of people that have a secondary occupation. On the whole, for all occupational groups the secondary occupation share is larger in the rural areas than the share of a secondary occupation is for the urban areas, excepting upper secondary teachers in public schools. In particular, note that the secondary occupation share for teachers in basic public schools is significantly larger than the secondary occupation share for the teachers in basic private schools. Yet if one compares the secondary occupation share for the teachers in basic public schools with regards to the upper secondary teachers occupation share, the pattern is the opposite, especially in the urban areas.

In addition, one can compare the teacher secondary occupation shares and the hours-worked in secondary occupation relative to the mixed-skilled group. The table below shows that the secondary occupation shares of teachers in public schools are larger than the shares of secondary occupation for the mixed-skilled group. Nevertheless, one must consider that: (a) The mixed-skilled group has the longest hours worked among all the occupational categories, and (b) the relative difference of hours worked in the main occupation and the total hours worked (including the hours worked in the secondary occupation) between the mixed-skilled group and these kinds of teachers remains almost unchanged in urban areas and increases in rural areas.
Table 4. Mean Weekly Hours-Worked and Secondary Occupation Shares

| Type of Occupation                     | Hours-worked Main Occupation | Adjusted\(^1\) Hours-worked Main Occupation | Hours-worked Secondary Occupation | Hours-worked Total Hours | Secondary Occupation Share |
|----------------------------------------|------------------------------|---------------------------------------------|----------------------------------|--------------------------|---------------------------|
|                                        | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural | Nal. | Urban | Rural |
| Primary Teacher Pub. Sch               | 29.4  | 29.1  | 23.2  | 23.0  | 2.3   | 3.4   | 31.8  | 32.6  | 13.4 | 12.3  | 21.2  |
| Primary Teacher Priv. Sch              | 33.4  | n.d.  | 26.3  | n.d.  | 0.4   | n.d.  | 33.8  | n.d.  | 3.0  | 3.0   | n.d.  |
| L-Secon. Teacher Pub. Sch.             | 34.0  | 33.0  | 26.8  | 26.0  | 2.1   | 2.3   | 36.2  | 35.3  | 16.4 | 14.6  | 25.6  |
| L-Secon. Teacher Priv. Sch             | 30.3  | n.d.  | 23.9  | n.d.  | 0.4   | n.d.  | 30.7  | n.d.  | 2.5  | 2.5   | n.d.  |
| U-Secon. Teacher Pub. Sch.             | 29.4  | 21.0  | 23.2  | 16.5  | 3.7   | 0.0   | 33.0  | 21.0  | 22.0 | 22.2  | 0.0   |
| U-Secon. Teacher Priv. Sch             | 21.6  | n.d.  | 17.0  | n.d.  | 7.4   | n.d.  | 29.0  | n.d.  | 30.5 | 30.5  | n.d.  |
| The mixed-skilled group                 | 46.0  | 43.9  | 43.4  | 41.3  | 1.2   | 5.6   | 47.2  | 49.5  | 8.7  | 6.1   | 24.4  |
| The agricultural group                  | 38.2  | 37.5  | 36.0  | 34.6  | 5.2   | 6.2   | 43.4  | 43.5  | 25.6 | 18.5  | 27.6  |
| The low-skilled group                   | 42.2  | 41.4  | 39.8  | 39.0  | 1.2   | 3.4   | 43.5  | 44.8  | 7.7  | 6.5   | 15.4  |

Source: Own calculations based on ENIGH96 survey

1/ Following OECD, it is assumed that teachers worked on average 41 weeks per year and non-teachers worked on average 49 weeks per year.

**Income, Labor Earnings and Salaries**

Teachers salaries have been highlighted as a very important issue in school improvement discussions. The level and structure of teacher remuneration are said to affect teacher morale and ability to focus on and devote adequate time to teaching well. Teacher remuneration could also determine the capacity of the education system to attract and retain good teachers. Table 5 presents several definitions of salaries and personal income sources, since much of the argument over teacher compensation refers to what is meant by the term “underpaid.” An issue that may hamper the comparison of net earnings across occupations and locations is non-regular and additional benefits, and the way certain allowances are made available to teachers. The labor earnings and salary figures tell us something about fairness of compensation, while total income refers to the teachers’ standard of living. It is clear from the table below that labor earnings is the largest share of all the teachers’ total income. This suggests that the teachers’ standard of living basically depends on what they obtain as labor income. On the other hand, total incomes for the mixed-skilled group, the agricultural group, and the low-skilled group are more uniformly distributed among other income sources.
Table 5. Personal Mean Monthly Incomes by Source (Constant 1994 pesos)

| Type of Occupation                        | Salary       | Labor Earnings | Monetary Current Income | Current Income | Financial Income | Total Income  |
|-------------------------------------------|--------------|----------------|-------------------------|----------------|------------------|---------------|
|                                           | Urban Rural  | Urban Rural    | Urban Rural             | Urban Rural    | Urban Rural      | Urban Rural   |
| Primary Teacher in Pub. School            | 1365.6       | 1451.4         | 1395.8                  | 1426.3         | 1551.5           | 1590.8        |
|                                           | 1590.8       | 1644.2         | 150.3                   | 78.0           |                  | 1600.3        |
| Primary Teacher in Priv. School           | 1699.4       | 1796.3         | 1845.8                  | 1830.7         | 1987.2           | 1911.7        |
|                                           | 2011.7       | 1987.2         | 40.9                    | 130.7          |                  | 1306.7        |
| Lower Secondary Teacher in Pub. School    | 1059.1       | n.d.           | 1074.9                  | n.d.           |                  | 1074.9        |
|                                           |              | n.d.           | 1074.9                  | n.d.           |                  | 1265.8        |
| Lower Secondary Teacher in Priv. School   |              | n.d.           | 1074.9                  | n.d.           |                  | 1265.8        |
| Upper Secondary Teacher in Pub. School    | 1363.1       | 921.5          | 1431.8                  | 931.3          |                  | 931.3         |
|                                           | 1762.9       | 931.3          | 1911.1                  | 1145.9         |                  | 1145.9        |
| Upper Secondary Teacher in Priv. School   | 961.5        | n.d.           | 1032.4                  | 92.1           |                  | 92.1          |
| University Teacher in Pub. School         | 2450.2       | n.d.           | 2529.9                  | n.d.           |                  | 2529.9        |
|                                           | 2688.5       | n.d.           | 1300.1                  | 82.2           |                  | 1300.1        |
| University Teacher in Priv. School        | 2546.6       | n.d.           | 2592.2                  | n.d.           |                  | 2592.2        |
| The mixed-skilled group                    | 684.3        | 261.7          | 759.5                   | 317.0          |                  | 1072.8        |
| The agricultural group                     | 177.5        | 91.5           | 184.1                   | 92.6           |                  | 270.9         |
| The low-skilled group                      | 330.8        | 235.5          | 375.7                   | 247.1          |                  | 568.8         |

n.d.: No data in the survey.
Source: Own calculations based on ENIGH96 survey

Tables 6 and 7 show real mean hourly salaries and mean hourly labor earnings, respectively, for total hours in main occupation, and total hours of main occupation plus secondary occupation. The hourly salary difference between teachers and other groups is quite high due to wide variance of the non-teaching group, and because teachers work relatively few hours.

Table 6. Mean Hourly Salary (Constant 1994 pesos)

| Type of Occupation                        | Mean Hourly Salary (Main Occup Hrs) | Mean Adjusted Hourly Salary (Main Occup Hrs) | Mean Hourly Salary (Total Hrs) | Mean Adjusted Hourly Salary (Total Hrs) |
|-------------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------|----------------------------------------|
|                                           | Urban Rural | Urban Rural    | Urban Rural             | Urban Rural    | Urban Rural | Urban Rural | Urban Rural | Urban Rural    |
| Primary Teacher in Pub. School            | 12.2        | 13.1           | 15.5                    | 16.7           | 11.4        | 11.4        | 12.4        | 14.8          |
| Primary Teacher in Priv. School           | 9.3         | 11.9           | 16.6                    | 17.7           | 12.1        | 13.1        | 16.2        | 14.4          |
| Lower Secondary Teacher in Pub. School    | 13.1        | 13.9           | 16.6                    | 17.7           | 12.1        | 13.1        | 16.2        | 14.4          |
| Lower Secondary Teacher in Priv. School   | 9.9         | 12.6           | 16.6                    | 17.7           | 12.1        | 13.1        | 16.2        | 14.4          |
| Upper Secondary Teacher in Pub. School    | 15.1        | 11.3           | 19.1                    | 14.3           | 13.6        | 14.3        | 15.0        | 14.0          |
| Upper Secondary Teacher in Priv. School   | 11.9        | 15.1           | 19.2                    | 14.0           | 12.2        | 12.2        | 12.2        | 12.2          |
| University Teacher in Pub. School         | 15.2        | 19.2           | 21.5                    | 28.6           | 7.8         | 7.8         | 7.8         | 7.8           |
| University Teacher in Priv. School        | 29.4        | 37.3           | 42.1                    | 49.4           | 14.0        | 14.0        | 14.0        | 14.0          |
| The mixed-skilled group                    | 3.9         | 1.5            | 4.2                     | 4.6            | 3.8         | 1.4         | 3.6         | 1.9           |
| The agricultural group                     | 1.2         | 0.6            | 1.3                     | 0.6            | 1.0         | 0.5         | 0.7         | 0.4           |
| The low-skilled group                      | 2.1         | 1.4            | 2.2                     | 2.0            | 2.0         | 1.2         | 2.0         | 1.2           |

Source: Own calculations based on ENIGH96 survey

1/ Following OECD, it is assumed that teachers work on an average of 41 weeks per year and non teachers work on average 49 weeks per year.
Table 7: Mean Hourly Labor Earnings (Constant 1994 pesos)

| Type of Occupation                       | Mean Hourly Labor Earnings (Main Occup Hrs) | Mean Ad.1/ Hourly Labor Earnings (Main Occup Hrs) | Mean Hourly Labor Earnings (Total Hrs) | Mean Ad.1/ Hourly Labor Earnings (Total Hrs) |
|-----------------------------------------|---------------------------------------------|-----------------------------------------------|----------------------------------------|---------------------------------------------|
|                                         | Urban Rural Urban Rural Urban Rural Urban Rural | Urban Rural Urban Rural | Urban Rural Urban Rural | Urban Rural |
| Primary Teacher in Pub. School          | 12.5 13.8                                  | 15.8 17.5                                    | 11.7 12.0                               | 12.6 16.3                                  |
| Primary Teacher in Priv. School         | 9.5 12.0                                   | 12.7 9.2                                    | 17.4                                   |                                           |
| Lower Secondary Teacher in Pub. School  | 13.3 14.4                                  | 16.9 18.3                                   | 12.2 13.6                               | 16.6 14.6                                  |
| Lower Secondary Teacher in Priv. School | 10.0 12.7                                  | 9.7                                          | 17.0                                   |                                           |
| Upper Secondary Teacher in Pub. School  | 15.9 11.3                                  | 20.1 14.4                                   | 14.4 11.3                               | 15.8                                       |
| Upper Secondary Teacher in Priv. School | 12.4 15.7                                  | 9.3                                          | 8.6                                    |                                           |
| University Teacher in Pub. School       | 15.6 19.8                                  | 14.4                                        | 12.7                                   |                                           |
| University Teacher in Priv. School      | 29.8 37.8                                  | 21.8                                        | 29.0                                   |                                           |
| The mixed-skilled group                 | 4.4 1.8                                    | 4.7 2.0                                     | 4.2 1.7                                 | 4.0 1.0                                    |
| The agricultural group                  | 1.2 0.6                                    | 1.3 0.6                                     | 1.1 0.5                                 | 0.8 0.4                                    |
| The low-skilled group                   | 2.4 1.5                                    | 2.5 1.6                                     | 2.2 1.3                                 | 1.8 0.8                                    |

Source: Own calculations based on ENIGH96 survey

1/ Following OECD, it is assumed that teachers work on average 41 weeks per year and non teachers work on an average of 49 weeks per year.

As shown in Table 8, real monthly labor earnings have increased substantially for primary public school teachers. Such earnings almost doubled from 1988 to 1994. In real terms, the teachers' salary increase was significantly above the increase obtained by other groups. The mixed-skilled group has lost purchasing power; losses have been even more severe for people employed in the agricultural group and the low-skilled group.

There is considerable variation in teacher’s labor earnings but significantly less than variation in earnings from other occupations. Basic public school teachers clearly earn higher earnings than the agricultural group, the low skilled group and the mixed-skilled group. In 1988, moreover, teachers were underpaid with respect to other Professionals with an University degree in Education not teaching; after 1994 this trend changed. In fact, University Teachers in Public School were earning a higher salary.
### Table 8. Real Monthly Labor Earnings in Urban Areas (Constant 1994 pesos)

| Type of Occupation                        | 1988 |         | 1994 |         | 1999 |         |
|-------------------------------------------|------|---------|------|---------|------|---------|
|                                           | Mean | Median  | S.D. | Mean    | S.D. | Mean    |
| Primary Teacher in Public School          | 862  | 826     | 239  | 1,660   | 1,590| 1,286   |
| Primary Teacher in Private School         | 836  | 875     | 343  | 1,614   | 1,391| 910     |
| Lower-Secondary Teacher in Pub. School    | 1,042| 972     | 410  | 1,872   | 1,688| 898     |
| Lower-Secondary Teacher in Priv. School   | 836  | 804     | 495  | 1,770   | 1,341| 1,520   |
| Upper-Secondary Teacher in Pub. School    | 1,345| 1,458   | 720  | 1,755   | 1,590| 1,003   |
| Upper-Secondary Teacher in Priv. School   | 1,024| 875     | 742  | 1,661   | 1,490| 914     |
| University Teacher in Public School       | 1,840| 1,702   | 922  | 2,357   | 2,186| 2,690   |
| University Teacher in Private School      | 904  | 972     | 666  | 2,431   | 1,987| 1,991   |
| Professionals with Upper-Secondary in Education not teaching | 1,026| 851     | 568  | 1,959   | 1,570| 1,567   |
| Professionals with an University degree in Education not teaching | 2,249| 1,653   | 1,207| 2,867   | 1,987| 1,981   |
| The mixed-skilled group                    | 1,199| 826     | 2,501| 1,573   | 994 | 1,069   |
| The agricultural group                    | 878  | 486     | 1,549| 1,139   | 641 | 2,682   |
| The low-skilled group                     | 835  | 656     | 2,018| 817     | 641 | 1,979   |

Source: Own calculations based on ENEU survey

Tables 9 and 10 present the teachers’ hourly labor earnings (mean monthly labor earnings divided by the total number of hours-worked per month, non adjusted and adjusted respectively). In both tables, teachers’ hourly earnings are higher in primary public schools than they are in primary private schools. At the lower secondary school level the difference is small. Interestingly, teachers hourly labor earnings and adjusted hourly labor earnings (taking into account two months vacation) are substantially above other worker’s hourly labor earnings but slightly below other Professionals with B.A in Education not teaching. In 1999, median hourly earnings for primary public school teachers was above median earnings of all comparable groups.
Table 9: Real Hourly Labor Earnings in Urban Areas (Constant 1994 pesos)

| Type of Occupation                              | Mean 1988 | Median 1988 | S.D. 1988 | Mean 1994 | Median 1994 | S.D. 1994 | Mean 1999 | Median 1999 | S.D. 1999 |
|------------------------------------------------|-----------|-------------|-----------|-----------|-------------|-----------|-----------|-------------|-----------|
| Primary Teacher in Public School               | 9.9       | 8.2         | 7.2       | 15.1      | 14.9        | 5.8       | 11.7      | 11.1        | 8.0       |
| Primary Teacher in Private School              | 9.8       | 8.7         | 6.9       | 15.9      | 12.9        | 12.7      | 7.8       | 6.8         | 4.6       |
| Lower-Secondary Teacher in Pub. School         | 12.3      | 8.8         | 12.4      | 15.4      | 14.8        | 7.2       | 11.9      | 11.4        | 4.9       |
| Lower-Secondary Teacher in Priv. School        | 9.2       | 8.3         | 4.7       | 16.7      | 13.7        | 12.5      | 11.7      | 10.2        | 6.7       |
| Upper-Secondary Teacher in Pub. School         | 14.6      | 10.8        | 11.5      | 16.4      | 15.1        | 10.9      | 12.0      | 11.4        | 6.3       |
| Upper-Secondary Teacher in Priv. School        | 18.4      | 7.2         | 35.3      | 15.6      | 13.4        | 8.1       | 13.2      | 11.5        | 9.8       |
| University Teacher in Public School            | 16.6      | 15.2        | 9.2       | 20.1      | 18.5        | 12.4      | 19.2      | 14.7        | 24.5      |
| University Teacher in Private School           | 11.4      | 10.5        | 7.6       | 20.1      | 18.2        | 13.2      | 16.2      | 12.0        | 11.5      |
| Professionals with Upper-Secondary in Education not teaching | 6.7       | 5.5         | 4.2       | 13.7      | 10.5        | 11.0      | 10.6      | 7.6         | 11.7      |
| Professionals with a University degree in Education not teaching | 15.1      | 14.7        | 6.2       | 19.4      | 15.5        | 16.3      | 13.3      | 10.7        | 16.4      |
| The mixed-skilled group                         | 7.4       | 4.9         | 15.4      | 9.8       | 5.5         | 98.1      | 6.1       | 3.9         | 7.9       |
| The agricultural group                         | 5.1       | 2.7         | 9.0       | 6.4       | 3.6         | 15.2      | 5.0       | 2.3         | 15.9      |
| The low-skilled group                          | 5.2       | 3.9         | 11.7      | 5.6       | 4.0         | 75.9      | 3.8       | 2.8         | 4.7       |

Source: Own calculations based on ENEU survey

In 1999, teachers in the public education system earned higher mean hourly labor earnings than their counterparts in the private sector and in other occupations. This pattern changes at the tertiary level, where private school teachers earned twice the labor earnings of public school teachers. There is not a significant difference in basic public teachers’ mean hourly labor earnings in urban and rural areas. Basic public teachers’ hourly labor earnings are significantly above those earned by the mixed-skilled group, the agricultural group or the low-skilled group. Teachers in the basic public school level earned three times more than the earnings of other workers. Alternately, adjusted real hourly salaries of primary teachers in public schools were higher than the adjusted real hourly salaries of those in the private schools.
Table 10. Real Adjusted\(^1\) Hourly Salary in Urban Areas (Constant 1994 pesos)

| Type of Occupation                        | 1988 Mean | 1988 Median | 1988 S.D. | 1994 Mean | 1994 Median | 1994 S.D. | 1999 Mean | 1999 Median | 1999 S.D. |
|------------------------------------------|-----------|-------------|-----------|-----------|-------------|-----------|-----------|-------------|-----------|
| Primary Teacher in Public School        | 12.6      | 10.4        | 9.2       | 19.1      | 18.9        | 7.4       | 14.8      | 14.1        | 10.1      |
| Primary Teacher in Private School       | 12.4      | 11.1        | 8.7       | 20.1      | 16.4        | 16.1      | 9.9       | 8.7         | 5.9       |
| Lower-Secondary Teacher in Pub. School  | 15.6      | 11.1        | 15.7      | 19.5      | 18.7        | 9.1       | 15.1      | 14.4        | 6.2       |
| Lower-Secondary Teacher in Priv. School | 11.7      | 10.6        | 6.0       | 21.1      | 17.3        | 15.8      | 14.8      | 13.0        | 8.4       |
| Upper-Secondary Teacher in Pub. School  | 18.5      | 13.7        | 14.5      | 20.8      | 19.1        | 13.9      | 15.2      | 14.4        | 8.0       |
| Upper-Secondary Teacher in Priv. School | 23.3      | 9.2         | 44.8      | 19.8      | 17.0        | 10.2      | 16.7      | 14.6        | 12.4      |
| University Teacher in Public School     | 21.0      | 19.3        | 11.7      | 25.5      | 23.4        | 15.7      | 24.3      | 18.6        | 31.1      |
| University Teacher in Private School    | 14.4      | 13.3        | 9.7       | 25.5      | 23.1        | 16.8      | 20.6      | 15.2        | 14.6      |
| Professionals with Intermediate Level in Education not teaching | 7.1 | 5.9 | 4.5 | 14.5 | 11.1 | 11.7 | 11.2 | 8.1 | 12.4 |
| Professionals with a University degree in Education not teaching | 16.0 | 15.6 | 6.5 | 20.6 | 16.5 | 17.3 | 14.1 | 11.3 | 17.4 |
| The mixed-skilled group                  | 7.9       | 5.2         | 16.3      | 10.5      | 5.9         | 104.1     | 0.5       | 4.2         | 8.4       |
| The agricultural group                   | 5.4       | 2.9         | 9.6       | 6.8       | 3.8         | 16.2      | 5.3       | 2.4         | 16.9      |
| The low-skilled group                    | 5.6       | 4.1         | 12.4      | 6.0       | 4.3         | 80.6      | 4.0       | 3.0         | 4.9       |

Source: Own calculations based on ENEU survey

\(^1\) Following OECD, it is assumed that teachers work on an average of 41 weeks per year and non teachers work on an average of 49 weeks per year.

After using several definitions of teacher salaries and payments, it is clear that real salaries and real labor earnings for teachers in basic public education are significantly above other occupations and groups salaries.

**Income Sources**

With respect to income sources, Table 11 shows the income source shares for primary teachers, lower secondary teachers and other occupational groups. From this table, one can see that salaries contribute close to 82 percent of the teachers’ total income. Notice that non-monetary income is the second highest income source, especially housing imputed rent and gifts (8.14 percent and 13.14 percent for primary teachers in public and private schools, respectively; 6.4 percent and 14.2 percent for lower secondary teachers in public and private schools, respectively). Financial income is also important for teachers; on average, its contribution to total income is about 5 percent\(^6\).

Yet half the income of the *mixed-skilled group* and the *low-skilled group* incomes comes from salary, while in the *agricultural group* salary contributes just 22.8 percent. Furthermore, it is clear that *own business incomes* are much more important to these occupational groups than to the teachers group.

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\(^6\) Table 6 in the annex shows that teachers' incomes in upper secondary and tertiary levels are more evenly distributed across income categories.
### Table 11. Source of Income by Occupational Status

| Source of Income            | Primary Teacher in Public School | Primary Teacher in Private School | Lower Secondary Teacher in Public School | Lower Secondary Teacher in Private School | The mixed-skilled group | The agricultural group | The low-skilled group |
|----------------------------|---------------------------------|----------------------------------|------------------------------------------|------------------------------------------|------------------------|-----------------------|------------------------|
|                            | Urban   | Rural  | Nat. | Urban   | Rural  | Nat. | Urban   | Rural  | Nat. | Urban   | Rural  | Nat. | Urban   | Rural  | Nat. | Urban   | Rural  | Nat. | Urban   | Rural  | Nat. |
| Labor Earnings             |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |
| Salaries                  | 81.24   | 80.21  | 81.10| 78.37   | n.d.   | 78.37| 81.38   | 84.82  | 81.93| 81.06   | 81.06  | 53.50| 43.95   | 52.82  | 19.32| 25.42   | 22.84  | 47.10| 52.15   | 47.56  |     |
| Commissions               | 0.00    | 0.00   | 0.00 | 0.00    | 0.00   | 0.00 | 0.00    | 0.00   | 0.00 | 0.00    | 0.00   | 3.71 | 4.23    | 3.75   | 0.63 | 0.29    | 0.43   | 4.90 | 1.83    | 4.62   |     |
| Compensations             | 0.64    | 3.17   | 0.98 | 0.08    | n.d.   | 0.08 | 0.62    | 1.82   | 0.82 | 0.00    | 0.00   | 0.75 | 0.77    | 0.75   | 0.03 | 0.01    | 0.02   | 0.86 | 0.37    | 0.82   |     |
| Vacation Pay              | 1.15    | 1.56   | 1.21 | 0.71    | n.d.   | 0.71 | 0.47    | 0.51   | 0.48 | 1.21    | 1.21   | 0.69 | 0.44    | 0.67   | 0.01 | 0.01    | 0.01   | 0.50 | 0.28    | 0.48   |     |
| Profits                   | 0.00    | 0.00   | 0.00 | 0.14    | n.d.   | 0.14 | 0.00    | 0.00   | 0.00 | 0.00    | 0.00   | 0.74 | 3.84    | 0.96   | 0.04 | 0.01    | 0.03   | 0.13 | 0.08    | 0.13   |     |
| Own Business Income       | 0.62    | 0.25   | 0.57 | 0.44    | n.d.   | 0.44 | 0.67    | 0.55   | 0.65 | 0.00    | 0.00   | 20.59| 22.14   | 20.70  | 51.49| 35.80   | 42.44  | 23.94| 18.62   | 23.46  |     |
| Monetary Transfers        |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |
| Pensions                  | 0.11    | 0.00   | 0.10 | 0.40    | n.d.   | 0.40 | 0.00    | 0.00   | 0.00 | 0.00    | 0.00   | 0.73 | 0.57    | 0.72   | 1.25 | 1.14    | 1.19   | 0.79 | 0.34    | 0.75   |     |
| Other Monetary Transfers  | 0.68    | 0.06   | 0.60 | 0.55    | n.d.   | 0.55 | 0.00    | 0.57   | 0.09 | 0.00    | 0.00   | 1.34 | 3.83    | 1.52   | 5.42 | 11.31   | 8.82   | 2.14 | 5.00    | 2.40   |     |
| Other current income      | 0.28    | 0.44   | 0.30 | 0.00    | n.d.   | 0.00 | 4.52    | 0.00   | 3.79 | 0.00    | 0.00   | 0.77 | 2.29    | 0.88   | 0.42 | 0.33    | 0.37   | 0.38 | 0.43    | 0.38   |     |
| Non Monetary Income       |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |
| Auto-Consumption           | 0.09    | 0.40   | 0.13 | 0.00    | n.d.   | 0.00 | 0.23    | 0.44   | 0.26 | 0.00    | 0.00   | 0.41 | 2.14    | 0.53   | 0.74 | 3.82    | 2.52   | 0.91 | 2.25    | 1.03   |     |
| Non Monetary Payment      | 0.66    | 0.30   | 0.61 | 0.89    | n.d.   | 0.89 | 1.60    | 0.55   | 1.43 | 0.40    | 0.40   | 1.35 | 1.25    | 1.35   | 0.57 | 0.54    | 0.55   | 2.36 | 2.65    | 2.39   |     |
| Gifts                      | 2.61    | 1.80   | 2.50 | 6.24    | n.d.   | 6.24 | 1.88    | 2.97   | 2.05 | 0.33    | 0.33   | 2.73 | 3.16    | 2.76   | 2.84 | 4.13    | 3.59   | 3.96 | 5.46    | 4.10   |     |
| Housing Imputed Rent      | 6.42    | 2.63   | 5.91 | 7.17    | n.d.   | 7.17 | 4.96    | 1.59   | 4.42 | 13.87   | n.d.   | 7.38 | 4.73    | 7.19   | 3.80 | 6.01    | 5.08   | 8.19 | 6.43    | 8.03   |     |
| Financial Income          |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |         |        |      |
| Monetary Financial Income | 5.36    | 9.13   | 5.87 | 4.87    | n.d.   | 4.87 | 3.67    | 6.17   | 4.08 | 3.13    | n.d.   | 4.22 | 5.85    | 4.33   | 10.97 | 10.09   | 10.46  | 3.57 | 3.89    | 3.60   |     |
| Non Monetary Financial Income | 0.00  | 0.00   | 0.00 | 0.12    | n.d.   | 0.12 | 0.00    | 0.00   | 0.00 | 0.00    | 0.00   | 0.03 | 0.09    | 0.03   | 0.01 | 0.11    | 0.07   | 0.01 | 0.02    | 0.01   |     |

n.d.: No data in the survey.
Source: Own calculations based on ENIGH96.
5. LABOR EARNINGS DETERMINANTS AMONG OCCUPATIONAL GROUPS USING REGRESSION MODELS

In addition to a simple descriptive comparison, Mincerian earning functions were estimated. We use these functions because we know that payment differences depend on qualifications, level of education and other personal characteristics. The main objective of this analysis is to determine whether teachers are underpaid. To enrich analysis, workers were reclassified into four occupational groups: *Teachers in basic public schools* (which includes teachers in primary public schools as well as teachers in secondary public schools), *Teachers in basic private schools* (which includes the same levels as in the previous definition but in private schools), *Other government workers* (which contains all the other occupational public groups, excepting teachers, with 12 years of formal schooling or more), and *Private sector workers* (workers in the private sector, excepting the agricultural group workers and for the low-skilled group workers, with 12 years of formal schooling or more). These two latter groups were chosen in order to provide close comparison. Separate ordinary least squares regressions were computed for both groups of teachers and for the comparable groups. The analysis uses hourly labor earnings as the dependent variable and years of schooling, gender, region (urban-rural), experience (defined as age-years of schooling-6) and experience squared as explanatory variables.

Estimates are presented in the table below.

| Table 12. Determinants of hourly labor earnings, 1996 |
|-----------------------------------------------|
| Teacher in basic Public schools | Teacher in basic Private schools | Other government Workers | Private sector Workers |
|-------------------------------|-------------------------------|--------------------------|------------------------|
| Years of schooling            | 0.058 *                      | 0.030                    | 0.128 *                |
| (3.464)                       | (0.998)                      | (9.245)                  | (13.518)               |
| Gender (Male=1)               | 0.083                        | 0.397 *                  | 0.038                  |
| (1.191)                       | (2.249)                      | (0.546)                  | (3.564)                |
| Experience                    | 0.033 *                      | 0.113                    | 0.083 *                |
| (2.705)                       | (1.312)                      | (5.039)                  | (5.483)                |
| Squared experience            | -0.0004 *                    | -0.002                   | -0.002 *               |
| (-1.976)                      | (-0.996)                     | (-3.708)                 | (-2.59)                |
| Region (Urban=1)              | -0.1233                      | Dropped                  | 0.051                  |
| (-1.561)                      |                               | (0.278)                  | (4.873)                |
| Constant                      | 1.2715 *                     | 0.709                    | -0.561 *               |
| (3.831)                       | (0.812)                      | (-2.049)                 | (-7.349)               |

Source: Authors' estimates based on ENIGH 1996 survey.

* Significant at the 5% level

T-stat in parenthesis.
These results indicate how returns to different factors vary among all the four occupational groups. Teachers in basic public schools have lower returns to years of schooling than do either other government workers or private sector workers—while basic public teachers have a return of 5.8% for an additional year of schooling, the private sector workers and the other government workers have returns of 16.8% and 12.8%, respectively.

In the private sector, gender has an important effect on hourly earnings—male teachers in basic private schools have an advantage over women of 49.7% and male workers in the private sector have an advantage of 23%. In the public sector, gender is not significant. This could be considered as an important incentive for women to incorporate themselves to the labor market through the public sector.

Differences between urban and rural areas might be a key issue from the social point of view. As one can see in the table above, the public sector does not face a regional discriminatory problem, because public employees in rural areas earn similar wages as those in urban areas. On the other hand, a private sector worker in urban areas earns 45.2% more than a private sector worker in rural areas.

Another advantage of running separate regressions is that differences in the earning gradients can be estimated over the life cycle of teachers (public and private) versus the other occupational groups. Additionally, earnings variation over life cycle by occupational groups can be evaluated to analyze whether labor earnings dispersion is low or high. This is equivalent to a lower or higher ex-ante risk. If earnings dispersion is low, we can more accurately prediction lifetime labor earnings. This interpretation shows a relationship between labor earnings and experience. Figure 3 profiles income for teachers in basic public and private schools, other government workers and workers in the private sector. This graph assumes a constant level of schooling (15 years), male and urban workers.
Teachers in basic private schools face the most uncertainty about lifetime salary and job tenure. Moreover, between eleven and thirty years of experience they earn more than public school teachers and the other groups. Teachers in basic public schools and comparable groups deal with a significantly lower risk from their salaries than do basic private school teachers. Teachers labor earnings in basic public school profiles are slightly flatter than the income profile for the private sector workers. At their initial stage of their professional life, teachers are paid about 79% more per hour than the private sector workers, and about 77% more than the other government workers. However, as can be seen in Figure 3, the public teacher's earnings grow at a slower rate than the comparable occupations. Note that other government workers’ wages grow at a significantly higher rate than do public teacher's salaries. Other government workers face significant risk through their professional life, possibly due to the uncertainty of obtaining retirement benefits and the lack of a civil service career in the public sector. But the public teachers’ union has been effective in stabilizing teachers’ jobs and salaries. Once a public school teacher enters the labor market, the union not only protects her position, but also protects her lifetime income. Teachers in basic public schools are better paid early in
life, receive generous retirement benefits and face less work pressure and uncertainty, so prefer to remain teachers until retirement.

As argued in a companion paper (Lopez-Acevedo and Salinas, 2000b), Carrera Magisterial might have increased the incentives for public teachers to hold their post, because teachers can aim for one of the three Carrera Magisterial options, namely Tercera Vertiente (Pedagogical Technician, Técnico pedagogico), before her/his retirement.

6. CONCLUSIONS

Teachers in basic education work less time than their counterparts. This trend becomes more pronounced when using adjusted weekly working hours. Close to 82 percent of teachers’ income come from salaries, which suggests that a teacher’s standard of living basically depends on what he/she obtains as labor income. On the other hand, total income for other occupational groups is more uniformly distributed among other income sources. Real monthly labor earnings have substantially increased for primary school teachers in public schools, having almost doubled from 1988 to 1994. In real terms, the teachers’ salary increase was significantly above the increase obtained by other groups. Teacher’s hourly labor earnings and adjusted hourly labor earnings (taking into account two months vacation) are substantially above other worker’s hourly labor earnings.

In addition to the previous descriptive analysis, regression models were used to estimate the conditional distribution labor earnings differentials among several occupations. In this analysis, it was found that teachers in basic public schools have lower return to schooling than either the private sector workers or the other government workers.

In the private sector, gender has an important effect on hourly earnings, while in the public sector, gender is not significant. This could be considered as an important incentive for women to incorporate themselves to the labor market through the public sector. Regarding region (urban-rural), teachers in basic public schools and other government workers in rural areas earn similar wages as those earned in the urban areas. For workers in the private sector, region has a significant impact on hourly earnings, since an urban worker in this sector earns 45.2% more than a rural worker in the same sector.
Teachers in basic private schools face the most uncertainty about lifetime salary and job tenure. On the other hand, teachers in basic public schools face a significant lower risk from their salaries. Moreover, teachers labor earnings in basic public school profiles are slightly flatter than the income profiles for the private sector workers.

Teachers in basic public schools are better paid early in life, receive generous retirement benefits, and face less work pressure and uncertainty, so they prefer remain teachers until retirement.

These results suggest that real salaries and real labor earnings for teachers in basic public education are significantly above other occupations and groups. Additionally, teachers in basic public schools face less uncertainty of having their standard of living reduced (measured as labor income). In other words, once a teacher enters the labor market as a public school teacher, the union not only protects his position but also his lifetime income. Thus, salary increases for public school teachers are unlikely to be a crucial factor on recruiting and retaining better teachers in the public schools.
ANNEX

1 THE DATA

1.1. THE NATIONAL URBAN EMPLOYMENT SURVEY

Category Selection

The individuals in the sample were classified according to their occupational status in the following categories:

• Primary Teacher in Public School
• Primary Teacher in Private School
• Lower-Secondary Teacher in Public School
• Lower-Secondary Teacher in Private School
• Upper-Secondary Teacher in Public School
• Upper-Secondary Teacher in Private School
• University Teacher in Public School
• University Teacher in Private School
• Professionals with Upper-Secondary Level in Education but not teaching
• Professionals with a University degree in Education but not teaching
• The mixed-skilled group. This group includes Professionals; Technicians; Show-business workers, arts, and sports; Managers and directors in the public as well as in the private sector; Managers and workers in the manufacturing industry; Administrative workers; And, workers in the commercial sector.
• The agricultural group. This group includes workers in agriculture, fishing and forestry.
• The low-skilled group. This group includes street vendors and workers in low-skilled service jobs; Servants, drivers, gardeners; and, Vigilant and guards
Group Selection: Must be older than 11 years; regular workers (non-seasonal workers) with positive labor earnings. The table below shows the sample size.

| Year | Total  | Group selected |
|------|--------|----------------|
| 1988 | 124,323 | 54,507         |
| 1989 | 125,820 | 55,349         |
| 1990 | 127,387 | 56,398         |
| 1991 | 126,262 | 56,712         |
| 1992 | 235,696 | 108,510        |
| 1993 | 239,394 | 109,359        |
| 1994 | 246,906 | 125,096        |
| 1995 | 252,563 | 128,571        |
| 1996 | 262,478 | 132,567        |
| 1997 | 272,356 | 142,002        |
| 1998 | 281,694 | 150,048        |
| 1999 | 318,724 | 167,727        |

1.2 The National Household Income and Expenditures Survey

Category Selection

For the purpose of the analysis, the individuals in the sample were classified according to their occupational status in the following categories:

- Primary Teacher in Public School
- Primary Teacher in Private School
- Lower Secondary Teacher in Public School
- Lower Secondary Teacher in Private School
- Upper Secondary Teacher in Public School
- Upper Secondary Teacher in Private School
- University Teacher in Public School
- University Teacher in Private School
- The mixed-skilled group. This group includes Professionals; Technicians; Show-business workers, arts,

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7 In this survey an additional adjustment had to be made: if the worker got a benefit at the end of the year (“aguinaldo”),
and sports; Managers and directors in the public as well as in the private sector; Managers and workers in the manufacturing industry; Administrative workers; and, workers in the commercial sector.

- The agricultural group. This group includes workers in agriculture, fishing and forestry.
- The low-skilled group. This group includes street vendors and workers in low-skilled service jobs; Servants, drivers, gardeners; and, Vigilant and guards.

The table below shows the sample size for the ENIGH 1996.

| Occupational Status                        | Sample Size |
|-------------------------------------------|-------------|
| No occupation                             | 40,161      |
| Primary Teacher in Public School          | 312         |
| Primary Teacher in Private School         | 28          |
| Lower Secondary Teacher in Public School  | 89          |
| Lower Secondary Teacher in Private School | 10          |
| Upper Secondary Teacher in Public School  | 42          |
| Upper Secondary Teacher in Private School | 17          |
| University Teacher in Public School       | 36          |
| University Teacher in Private School      | 5           |
| Other Teacher in Public School            | 138         |
| Other Teacher in Private School           | 61          |
| The mixed-skilled group                   | 13,263      |
| The agricultural group                    | 6,278       |
| The low-skilled group                     | 3,919       |
| Total                                     | 64,359      |

1/ The total number of households in ENIGH 1996 was 14,042

then the salary was expanded (we assumed that this benefit to be equivalent to 30 days of salaries a year).
2. Results

2.1 ENEU Tables

Table 3. Women Share and Number of Children by Occupation in Urban areas

| Type of Occupation                        | 1988 | 1994 | 1999 |
|-------------------------------------------|------|------|------|
|                                           | Woman Share % | Number of Children | Woman Share % | Number of Children | Woman Share % | Number of Children |
| Primary Teacher in Public School          | 75.9 | 1.7  | 73.1 | 1.8  | 75.5 | 2.0  |
| Primary Teacher in Private School        | 78.0 | 0.8  | 81.9 | 1.5  | 91.0 | 1.7  |
| Lower-Secondary Teacher in Pub. School   | 38.0 | 1.7  | 51.7 | 1.5  | 53.9 | 1.7  |
| Lower-Secondary Teacher in Priv. School  | 55.4 | 1.0  | 54.5 | 1.4  | 66.8 | 1.4  |
| Upper-Secondary Teacher in Pub. School   | 27.3 | 1.6  | 47.2 | 1.3  | 34.4 | 1.6  |
| Upper-Secondary Teacher in Priv. School  | 43.0 | 0.4  | 44.9 | 1.5  | 54.6 | 1.2  |
| University Teacher in Public School      | 39.4 | 1.8  | 33.2 | 1.3  | 34.3 | 1.4  |
| University Teacher in Private School     | 63.2 | 0.4  | 38.4 | 1.6  | 33.1 | 0.9  |
| Professionals with Upper-Secondary in Education not teaching | 61.9 | 1.4  | 70.9 | 2.0  | 72.8 | 2.1  |
| Professionals with an University degree in Education not teaching | 47.1 | 0.0  | 54.4 | 1.5  | 61.5 | 1.6  |
| The mixed-skilled group                   | 29.1 | 1.5  | 30.7 | 1.5  | 32.5 | 1.5  |
| The agricultural group                    | 3.6  | 4.0  | 4.4  | 4.5  | 5.7  | 4.5  |
| The low-skilled group                     | 36.3 | 2.8  | 50.5 | 2.6  | 49.2 | 2.5  |

Source: Own calculations based on ENEU survey

Table 4. Weekly Hours-Worked by Occupation in Urban areas

| Type of Occupation                        | 1988 | 1994 | 1999 |
|-------------------------------------------|------|------|------|
|                                           | Mean | Median | S.D. | Mean | Median | S.D. | Mean | Median | S.D. |
| Primary Teacher in Public School          | 25.0 | 26.7  | 6.7  | 28.5 | 25.0  | 6.4  | 28.3 | 25.0  | 6.1  |
| Primary Teacher in Private School        | 25.5 | 29.2  | 11.0 | 28.0 | 25.0  | 8.4  | 30.2 | 30.0  | 8.3  |
| Lower-Secondary Teacher in Pub. School   | 28.1 | 28.9  | 9.5  | 31.3 | 30.0  | 8.8  | 32.3 | 35.0  | 9.2  |
| Lower-Secondary Teacher in Priv. School  | 23.9 | 25.0  | 10.2 | 27.2 | 30.0  | 9.2  | 25.9 | 25.0  | 10.3 |
| Upper-Secondary Teacher in Pub. School   | 27.4 | 30.0  | 11.1 | 29.1 | 30.0  | 10.8 | 32.6 | 35.0  | 9.2  |
| Upper-Secondary Teacher in Priv. School  | 29.9 | 33.6  | 12.2 | 28.7 | 30.0  | 10.8 | 27.9 | 30.0  | 11.7 |
| University Teacher in Public School      | 30.8 | 35.0  | 12.4 | 32.7 | 40.0  | 15.5 | 36.1 | 40.0  | 10.4 |
| University Teacher in Private School     | 25.6 | 32.0  | 13.3 | 31.7 | 35.0  | 12.3 | 31.9 | 35.0  | 14.2 |
| Professionals with Upper-Secondary in Education not teaching | 40.3 | 40.0  | 9.9  | 38.4 | 40.0  | 10.2 | 40.0 | 40.0  | 11.1 |
| Professionals with an University degree in Education not teaching | 37.2 | 38.0  | 8.0  | 38.6 | 40.0  | 12.6 | 39.3 | 40.0  | 10.8 |
| The mixed-skilled group                   | 43.1 | 44.4  | 11.5 | 45.7 | 45.0  | 12.6 | 45.8 | 45.0  | 12.1 |
| The agricultural group                    | 44.9 | 47.0  | 14.6 | 48.7 | 48.0  | 15.8 | 47.2 | 48.0  | 15.1 |
| The low-skilled group                     | 43.8 | 45.0  | 15.9 | 42.9 | 45.0  | 17.7 | 42.9 | 45.0  | 17.4 |

Source: Own calculations based on ENEU survey
### Table 5. Adjusted<sup>1</sup> Weekly Hours-Worked by Occupation in Urban Areas

| Type of Occupation                  | Mean 1988 | Median 1988 | S.D. 1988 | Mean 1994 | Median 1994 | S.D. 1994 | Mean 1999 | Median 1999 | S.D. 1999 |
|-------------------------------------|-----------|-------------|-----------|-----------|-------------|-----------|-----------|-------------|-----------|
| Primary Teacher in Public School    | 19.7      | 21.1        | 5.3       | 22.5      | 19.7        | 5.0       | 22.3      | 19.7        | 4.8       |
| Primary Teacher in Private School   | 20.1      | 23.0        | 8.6       | 22.1      | 19.7        | 6.6       | 23.8      | 23.7        | 6.6       |
| Lower-Secondary Teacher in Pub. School | 22.2  | 22.8        | 7.5       | 24.7      | 23.7        | 6.9       | 25.5      | 23.7        | 7.2       |
| Lower-Secondary Teacher in Priv. School | 18.9  | 19.7        | 8.0       | 21.4      | 23.7        | 7.3       | 20.4      | 19.7        | 8.1       |
| Upper-Secondary Teacher in Pub. School | 21.6  | 23.7        | 8.7       | 22.9      | 23.7        | 8.5       | 25.7      | 27.6        | 7.3       |
| Upper-Secondary Teacher in Priv. School | 23.6  | 26.5        | 9.6       | 22.6      | 23.7        | 8.5       | 20.0      | 23.7        | 9.2       |
| University Teacher in Public School | 24.3      | 27.6        | 9.8       | 25.8      | 31.5        | 12.2      | 28.4      | 31.5        | 8.2       |
| University Teacher in Private School | 20.2      | 25.2        | 10.5      | 25.0      | 27.6        | 9.7       | 25.2      | 27.6        | 11.2      |
| Professionals with Upper-Secondary Education not teaching | 38.0 | 37.7        | 9.3       | 36.2      | 37.7        | 9.6       | 37.7      | 37.7        | 10.5      |
| Professionals with an University degree in Education not teaching | 35.0 | 35.8        | 7.5       | 36.4      | 37.7        | 11.9      | 37.0      | 37.7        | 10.2      |
| The mixed-skilled group             | 40.7      | 41.8        | 10.8      | 43.0      | 42.4        | 11.9      | 43.2      | 42.4        | 11.4      |
| The agricultural group              | 42.3      | 44.3        | 13.8      | 45.9      | 45.2        | 14.8      | 44.5      | 45.2        | 14.3      |
| The low-skilled group               | 41.3      | 42.4        | 15.0      | 40.4      | 42.4        | 16.6      | 40.5      | 42.4        | 16.4      |

Source: Own calculations based on ENEU survey

<sup>1</sup> Following OECD, it is assumed that teachers work on average 41 weeks per year and non teachers work on average 49 weeks per year.

### 2.2 ENIGH TABLES

### Table 6. Source of Income by Occupational Status

| Source of Income                | Upper Secondary Teacher in Public School | Upper Secondary Teacher in Private School | University Teacher in Public School | University Teacher in Private School |
|---------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------|------------------------------------|
|                                 | Urban | Rural | Nat. | Urban | Rural | Nat. | Urban | Rural | Nat. | Urban | Rural | Nat. |
| Labor Earnings                  |       |       |      |       |       |      |       |       |      |       |       |      |
| Salaries                        | 57.06 | 80.42 | 57.16 | 50.74 | n.d.  | 50.74 | 78.63 | n.d.  | 78.63 | 81.44 | n.d.  | 81.44 |
| Commissions                     | 0.12  | 0.00  | 0.12  | 0.00  | n.d.  | 0.00  | 0.00  | n.d.  | 0.00  | 0.00  | n.d.  | 0.00  |
| Compensations                   | 0.56  | 0.00  | 0.56  | 0.00  | n.d.  | 0.00  | 1.11  | n.d.  | 1.11  | 1.46  | n.d.  | 1.46  |
| Vacation Pay                    | 2.20  | 0.86  | 2.19  | 1.63  | n.d.  | 1.63  | 1.45  | n.d.  | 1.45  | 1.46  | n.d.  | 1.46  |
| Profits                         | 0.00  | 0.00  | 0.00  | 0.00  | n.d.  | 0.00  | 0.00  | n.d.  | 0.00  | 0.00  | n.d.  | 0.00  |
| Own Business Income             | 5.91  | 0.00  | 5.89  | 3.87  | n.d.  | 3.87  | 0.95  | n.d.  | 0.95  | 0.00  | n.d.  | 0.00  |
| Income from Cooperatives        | 0.00  | 0.00  | 0.00  | 0.00  | n.d.  | 0.00  | 0.00  | n.d.  | 0.00  | 0.00  | n.d.  | 0.00  |
| Rents                           | 0.87  | 0.00  | 0.87  | 0.39  | n.d.  | 0.39  | 0.00  | n.d.  | 0.00  | 0.00  | n.d.  | 0.00  |
| Monetary Transfers              |       |       |      |       |       |      |       |       |      |       |       |      |
| Pensions                        | 0.00  | 0.00  | 0.00  | 5.60  | n.d.  | 5.60  | 0.00  | n.d.  | 0.00  | 2.83  | n.d.  | 2.83  |
| Other Monetary Transfers        | 3.81  | 0.00  | 3.79  | 1.87  | n.d.  | 1.87  | 2.70  | n.d.  | 2.70  | 0.00  | n.d.  | 0.00  |
| Other current income            | 3.27  | 0.00  | 3.26  | 0.00  | n.d.  | 0.00  | 1.44  | n.d.  | 1.44  | 0.00  | n.d.  | 0.00  |
| Non Monetary Income             |       |       |      |       |       |      |       |       |      |       |       |      |
| Auto-Consumption                | 0.20  | 5.49  | 0.22  | 0.14  | n.d.  | 0.14  | 0.01  | n.d.  | 0.01  | 0.00  | n.d.  | 0.00  |
| Non monetary Payment            | 0.44  | 0.00  | 0.44  | 2.12  | n.d.  | 2.12  | 0.75  | n.d.  | 0.75  | 2.84  | n.d.  | 2.84  |
| Gifts                           | 0.95  | 0.30  | 0.95  | 4.45  | n.d.  | 4.45  | 1.77  | n.d.  | 1.77  | 0.62  | n.d.  | 0.62  |
| Housing Imputed Rent            | 4.62  | 12.93 | 4.65  | 21.46 | n.d.  | 21.46 | 7.50  | n.d.  | 7.50  | 8.52  | n.d.  | 8.52  |
| Financial Income                |       |       |      |       |       |      |       |       |      |       |       |      |
| Monetary Financial Income       | 19.99 | 0.00  | 19.91 | 7.73  | n.d.  | 7.73  | 3.69  | n.d.  | 3.69  | 2.30  | n.d.  | 2.30  |
| Non Monetary Financial Income   | 0.01  | 0.00  | 0.01  | 0.00  | n.d.  | 0.00  | 0.00  | n.d.  | 0.00  | 0.00  | n.d.  | 0.00  |

n.d.: No data in the survey.

Source: Own calculations based on ENIGH96 survey
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