Evolution of Teachers' Salaries in Latin America at the Turn of the 20th Century: How Much Are They (Under or Over) Paid?

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ABSTRACT

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How much are teachers paid in comparison to those in other professions in Latin America? How have these differences evolved at the turn of the 20th century? This paper reports the evolution, between circa 1997 and circa 2007, of teachers´ salaries vis-à-vis workers in other professional and technical occupations for thirteen Latin-American countries. After controlling the earnings differentials by observable characteristics linked to productivity it is found that the hourly earnings gap, although substantial, decreased throughout the decade. This has been the case for earnings gaps at the main and secondary jobs, and also for those measured in terms of monthly and yearly earnings. Nonetheless, behind the region averages there is an important cross-country heterogeneity.

JEL Classification: J31, J44, J8, O54

Keywords: wage differentials, professional labor markets, national and international labor standards, Latin America, Caribbean

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1. Introduction

School teachers' salaries are often perceived to be lower than those of other professionals; this perception is especially strong among teachers. This affects the teachers' motivation to educate (OECD 2009; Figlio and Kenny 2006; Ortega 2010, Player 2009, Heutel 2009, Loeb and Page, 2000); causes good teachers to leave the profession (Imazeki 2005; Harris and Adams, 2007; Scafidi et al., 2007); and good students to avoid choosing an education major in college. These in turn would produce negative effects in students' learning. To improve the quality of education it is essential to pay special attention to teachers and to implement policies to attract, motivate and retain the most talented individuals in the profession.

A series of studies have analyzed teachers' salaries, with mixed results regarding their relative under or over-payment in the labor markets. In fact, the available empirical evidence shows that the sign and the magnitude of the conditional wage differential between teachers and other workers crucially depends on the definition of the comparison group, even when differences in observable characteristics are accounted for, both in Latin America[1] and out of the region[2].

More recently Mizala and Ñopo (2011), analyzing representative samples of nine Latin American countries circa 2007, found that teachers' underpayment is stronger than what has been previously reported in the literature for Latin America. Teachers' underpayment with respect to other professionals and technicians was found to be more pronounced among males, older workers, household heads, part-timers, formal workers, those who work in the private sector, and (mostly) among those with complete tertiary education. Exploring the role of job schedules and job tenure (which are claimed to be more flexible and longer, respectively, for teachers) as compensating differentials, it was found that even after accounting for them the conditional earnings gap prevails. This paper builds up on these results, expanding them in three important dimensions: (i) exploring the evolution of those conditional earning gaps between circa 1997 and circa 2007, (ii) expanding the number of countries to thirteen, improving on its representativeness, and (iii) exploring deeper into the role of individuals' unobservable characteristics by using information from their main and second jobs.

The question of earnings differentials conditioning on observable characteristics is assessed with a non-parametric matching approach developed in Ñopo (2008). The results depict a picture in which teachers, still today, are underpaid vis-à-vis other professionals and technicians. We found, however, that preschool and elementary teachers' earnings (vis-à-vis those of other professionals and technicians) improved during the decade, especially for the young, females, part-time workers

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[1] Psacharopoulos et al. (1996), Liang (1999), and Hernani-Limarino (2005) analyze several Latin American countries. Saavedra (2004) examines Perú, Mizala and Romaguera (2005) Chile, Lopez-Acevedo (2004) Mexico, Rivas and Lavarreda (2008) Guatemala, Herreros et al. (2003) Argentina, Piras and Savedoff (1998) and Urquiola et al. (2000) Bolivia.

[2] Taylor (2008), Allegretto et al (2008), Podgursky and Tongrut (2006), Harris and Adams (2005), Stoddard (2005) for United States, Asadullah (2006) for Bangladesh; Komenan and Grootaert (1990) for Cote D' Ivoire; Zymelman and DeStephano (1989) for Sub-Saharan African countries.

and those holding only one job. Also, teachers more frequently report having more than one job compared to other professionals and technicians. We analyze the decision of having a second job, as well the earnings gaps at main and second jobs between teachers and non-teachers (restricting our comparison to those who have a second job). The gap in the second job prevails but is smaller than in the main job, and it also decreased throughout the decade.

The rest of the paper proceeds as follows. In the next section we introduce the data sources, the approach to harmonize them across countries and some descriptive statistics comparing teachers with other professionals and technicians. In section three we present the main empirical analysis of earnings gaps decompositions (analyzing its evolution during the 10-year period), exploring the role of the two extra amenities: (i) shorter and flexible job schedules (with the consequent possibility of holding an extra job), and (ii) more job stability. In the fourth section we summarize and conclude.

2. The Data

The data comes from nationally representative household and labor surveys of thirteen Latin-American countries circa 1997 and circa 2007. Table 1 reports the specifics of each data source: the country, the survey name, the year and the number of observations for the whole sample of workers ("Full Set") and the subsamples of workers that will be compared ("Pre-School and Elementary Teachers", "High School Teachers" and "Other Professionals and Technicians"). The expansion factors of each data set are used such that the relative size of each sample proportionally corresponds to the working population of each country. Table A1 in the Appendix shows the occupational categories that we used in each country to identify teachers and other professionals and technicians. University teachers and those with particular specialties (e.g., teachers for students with special needs, language instructors, sports instructors, driving instructors, and dance or art instructors) are not considered for the analysis. They are neither part of the teachers' nor of the non-teachers' population. Then, when we refer here to teachers or school teachers, we will be referring to both high school teachers and pre-school and elementary teachers.

The sample of interest (school teachers and other professionals and technicians) represents 10.2% and 14.4% of the working sample circa 1997 and circa 2007 respectively. Those who declare being teachers stand for 3.5% and 3.1%, and the other professionals and technicians stand for 6.6% and 11.3% of the working sample for each period, respectively. Outliers for income at the main occupation were dropped from the data set. This comprised 1% of the working sample for both periods under analysis (0.3% and 0.6% percent of the school teachers, and 6% and 5% percent of the other professionals and technicians for each period, respectively).

Table 1 shows that the proportion of teachers ranges from 2% to 5% in both periods and it slightly decreased for many countries: Bolivia, Brazil, Chile, El Salvador, Panama, Paraguay and Peru. On the other hand, the population of other professionals and technicians increased for all countries during the period.

Table 1. Data Sources and Sample Sizes, by Group

Country	Name Of The Survey	Year	Other Professionals and Technicians/Teachers (non tertiary) Working Populations*							
			Full Set		Pre-School and Elementary Teachers		High School Teachers		Other Professionals and Technicians	
			Number of observations	Expanded observations	Number of observations	Expanded observations	Number of observations	Expanded observations	Number of observations	Expanded observations
Bolivia	Encuesta Nacional de Empleo (ENE or EE)	1997	10288	2218471	350	69377	197	41673	708	158542
		2009	8537	1478942	254	36549	181	25730	1360	206769
Brazil	Pesquisa Nacional por Amostra de Domicilio (PNAD)	1995	110093	49700000	3406	1546106	719	313631	6217	2715156
		2009	162632	78400000	3976	1918232	1150	542706	18352	9006210
Chile	Encuesta de Caracterizacion Socioeconomica Nacional (CASEN)	1998	61492	4966500	1388	123222	365	40524	4524	579730
		2009	82904	6021472	1535	113719	278	31928	8324	1003972
Costa Rica	Encuesta de Hogares de Propósitos Múltiples (EHPM)	1995	12199	966662	218	16900	81	6541	720	68506
		2009	18107	1797512	345	34639	211	19625	3047	366669
Dominican Republic	Encuesta Nacional de Fuerza de Trabajo (ENFT)	2000	8078	3096833	159	62525	29	10793	828	295452
		2008	10810	3479268	252	80158	64	19633	757	356222
Ecuador	Encuesta de Empleo, Desempleo y Subempleo (ENEMDU)	2000	9374	1967617	257	46650	38	4720	441	92618
		2006	21694	5219747	529	117720	255	56533	1372	369388
El Salvador	Encuesta de Hogares de Propositos Multiples (EHPM)	1995	10950	1553995	265	33192	25	3672	691	110980
		2009	24299	1961864	518	41415	54	4758	1733	198244
Honduras	Encuesta Permanente de Hogares de Propósitos Múltiples (EPHPM)	1995	9005	1539817	232	36542	78	11974	536	70158
		2007	26588	1936852	719	53219	211	15042	2755	184566
Nicaragua	Encuesta Nacional de Hogares sobre medicion de Niveles de Vida (EMNV)	1998	5739	1078232	181	31456	27	4920	324	71975
		2005	11023	1652223	377	48401	64	9292	578	115217
Panama	Encuesta de Hogares (EH)	1995	11318	722732	316	17680	207	13360	924	65954
		2007	18843	1269338	395	24953	220	14764	1638	126569
Paraguay	Encuesta de Hogares por Muestra (Mano de obra)	1996	4452	1163769	83	22291	48	11779	264	68067
	Encuesta Permanente de Hogares (EPH)	2006	6302	1692845	129	26241	51	10119	441	126717
Peru	Encuesta Nacional de Hogares (ENAHO)	1997	10036	8506517	247	153138	180	141606	774	832518
		2009	33905	11600000	670	227592	388	130361	2897	1148469
Uruguay	Encuesta Continua de Hogares (ECH)	1998	21202	979846	335	15388	257	12233	1710	81865
		2007	25295	530153	592	12238	418	9023	2810	60406

* Source: Authors' compilations from household surveys.
Note: Working populations in each country are identified as those earning a salary in the main occupation.

Table 2 shows the descriptive statistics for observable characteristics in all countries' data sets for the two periods of analysis. Teaching is a predominantly female occupation as approximately nine out of ten pre-school and elementary teachers are women, and six out of ten high school teachers are so. On the other hand, the proportion of males among other professionals and technicians is roughly more than 50%. Such compositions remain almost unchanged over the decade. The working population aged during the period. Workers above 45 years old increased their share in all comparison groups but this has been more pronounced in the case of teachers.

Pre-school and elementary school teachers became more professionalized during the decade as the percentage of those with tertiary complete education jumped from 13% to 19%. This did not happen among neither high-school teachers nor other professionals and technicians. In all comparison groups the share of workers with secondary education increased while the share of those with lower education decreased. Teachers' educational achievement surpasses that of other professionals and technicians and this has not changed during the decade.

In both periods around 50% of pre-school and elementary teachers report living with children (12 years old or younger), while around 45% of high school teachers and non-teachers do so. The trend during the decade, however, shows a decrease in fertility in all workers' households. Also teachers, particularly high school teachers, report living with elder people (65 years or older) in a higher proportion than the other groups. Household headship has been less prevalent among teachers than among other professionals and technicians, but increased for the former during the decade. Similarly, presence of other household member generating labor income, another proxy for financial responsibility, reveals the shortening of differences between teachers and other professionals and technicians. The proportion of teachers working part-time (30 hours or less per week), although has declined, is almost threefold than that of other professionals and technicians. Even more interesting, not only a higher proportion of teachers have a secondary job, but also such share increased over the decade. During the same period such share decreased for other professionals and technicians.

Table 2. Descriptive Statistics, by Group

	Pre-School and Elementary Teachers		High School Teachers		Other Professionals and Technicians	
	Circa 1997	*Circa 2007*	*Circa 1997*	*Circa 2007*	*Circa 1997*	*Circa 2007*
Personal Characteristics						
Men (gender)	12.2%	13.1%	39.1%	38.6%	55.8%	57.2%
Age groups						
24 and under	17.5%	10.3%	10.9%	7.9%	12.8%	15.1%
25 to 34	37.6%	31.4%	31.6%	25.7%	35.6%	33.8%
35 to 44	28.7%	31.5%	33.4%	30.7%	30.2%	24.1%
45 to 54	13.7%	19.8%	20.2%	23.9%	14.9%	18.0%
54 and over	2.5%	7.0%	3.9%	11.8%	6.4%	9.0%
Education level						
None or primary incomplete	5.1%	0.2%	3.2%	0.0%	7.5%	4.5%
Primary complete or secondary incomplete	7.5%	3.0%	2.8%	1.1%	11.2%	8.3%
Secondary complete or tertiary incomplete	74.2%	77.9%	55.1%	65.5%	57.0%	68.6%
Tertiary complete	13.2%	18.9%	38.9%	33.5%	24.2%	18.7%
Presence of children (≤12 years) in the household	58.2%	48.4%	50.8%	40.9%	52.4%	39.8%
Presence of elder (≥65 years) in the household	13.0%	14.5%	16.9%	16.9%	14.1%	13.9%
Head of the Household	19.5%	30.2%	39.0%	43.1%	48.7%	46.7%
Presence of other household member with labor income	79.2%	77.1%	74.4%	73.8%	69.7%	72.0%
Labor Characteristics						
Part time workers (≤30 hours)	62.5%	55.6%	55.2%	48.7%	19.8%	19.4%
More than one job	15.9%	18.8%	23.7%	27.9%	13.1%	10.7%

* Source: Authors' calculations from household surveys.

Table 3 shows the relative earnings at the main job of the groups being compared by observable characteristics. Earnings are computed as hourly earnings, measured in terms of purchasing power parity (PPP, US$, 2000). Hourly earnings for each individual are computed dividing the monthly income by 4.3 times the number of hours worked in a week.[3] Average school teachers' hourly earnings circa 1997 have been set equal to 100 for each country (i.e., the average hourly earnings of both, pre-school and elementary teachers and high school teachers altogether).

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[3] The monthly income corresponds to the monthly earnings received from the main occupation in the month previous to the survey. The job schedule is captured with survey questions of the type, for example: "¿Quantas horas trabalhava normalmente por semana nesse trabalho? ¿Cuántas horas trabaja efectivamente en su empleo o actividad principal? Señale horas semanales, ¿cuántas horas efectivas al día trabajó la semana pasada? ¿Cuántas horas trabajó la semana pasada en la ocupación principal? El mes pasado, ¿cuántas horas a la semana trabajó en este negocio o empresa? ¿Cuántas horas por semana trabaja regularmente como...?; ¿Cuántas horas, días y en qué jornada trabajo efectivamente la semana anterior?". So, it can be inferred that teachers are referring not only to their effective class time but to their whole job schedule (including preparation, grading, meeting times and the like).

It is shown in the table that, on average, for both periods pre-school and elementary teachers earn less than high school teachers; these in turn earn less than other professionals and technicians circa 1997 and slightly more circa 2007. However, it should be noted that during the period, pre-school and elementary teachers' earnings increased during the period of analysis while that of high-school teachers slightly dropped. The most notorious change in earnings can be seen among other professional and technicians. On average it dropped almost 25% in real terms which corresponds to almost 50% of average teachers' earnings circa 1997. This suggests, by now, that the gap closed due to a decrease in other professionals and technicians real acquisitive capacity.

Regarding differences according to the observable characteristics of the populations the typical patterns arise. Men earn more than women, especially in the case of other professionals and technicians. Earnings increase along a worker's life span, as well as with higher educational attainment. People that live with kids, live with elder people, are not household heads and live with another wage earner tend to earn less that those who don't or are not. These differences tend to be more pronounced among other professional and technicians than among teachers. Additionally, part-time workers and those who report having more than one job earn more than those who don't. The difference between workers who have a second job and those who don't slightly decreased during the decade, while the difference between those who are part-time workers and those who are not markedly increased.

Table 3. Relative Hourly Earnings at the Main Job, by Group

Relative Hourly Earnings (Base: Average School Teacher Earnings circa 1997 in each Country=100)						
	Pre-School and Elementary Teachers		High School Teachers		Other Professionals and Technicians	
	Circa 1997	Circa 2007	Circa 1997	Circa 2007	Circa 1997	Circa 207
Average Hourly Earninngs	90.3	99.7	134.3	128.7	163.0	123.0
Personal Characteristics						
Men						
No	89.3	97.6	132.4	127.8	141.3	112.8
Yes	97.5	113.3	137.2	130.1	180.2	130.6
Age groups						
24 and under	59.6	64.5	112.0	84.5	90.3	70.5
25 to 34	83.5	88.1	123.0	112.7	153.2	114.1
35 to 44	103.8	103.7	140.7	130.3	183.1	135.1
45 to 54	115.0	118.4	148.4	140.0	195.1	150.7
54 and over	116.7	132.2	160.0	166.0	193.1	156.4
Education level						
None or primary incomplete	32.3	49.5	81.2	29.9	78.6	62.4
Primary complete or secondary incomplete	45.5	82.8	111.4	109.4	93.5	76.3
Secondary complete or tertiary incomplete	97.1	96.9	145.1	123.1	174.8	119.1
Tertiary complete	99.8	114.3	125.0	140.3	193.6	172.5
Presence of children (≤12 years) in the household						
No	96.0	101.5	137.0	129.7	170.3	125.1
Yes	86.2	97.7	131.6	127.3	156.3	119.7
Presence of elder (≥65 years) in the household						
No	90.7	99.3	135.9	128.1	164.4	124.0
Yes	87.2	101.6	126.4	131.8	154.5	116.7
Head of the household						
No	87.3	94.4	127.9	123.1	134.8	107.0
Yes	102.4	111.9	144.2	136.2	192.7	141.1
Presence of other household member with labor income						
No	90.2	100.3	129.2	129.4	171.5	128.0
Yes	90.3	99.5	136.0	128.5	159.3	121.0
Labor Characteristics						
Part time						
No	84.8	87.5	121.3	110.3	154.3	118.5
Yes	93.5	109.3	144.8	148.1	197.8	141.6
More than one job						
No	87.1	97.2	132.0	125.2	158.1	120.0
Yes	107.1	110.2	141.5	137.9	195.1	148.2

* Source: Authors' calculations from household surveys

At the aggregate, on average, other professionals and technicians earn around 115% and 43% more than pre-school and elementary teachers, circa 1997 and circa 2007 respectively. Also, they earn 42% more than high school teachers circa 1997, and 5% less circa 2007 (although this last difference is not significant at conventional levels). These statistics, however, are merely referential. They compare teachers with professionals and technicians that might substantially differ in terms of observable characteristics. As shown above in this section, teachers and other

professionals and technicians differ regarding their human capital, job characteristics and socio-demographic composition. Then, it is appropriate to think that these differences in observable characteristics play a role explaining the earnings differentials. Hence, controlling the earnings gap by observable characteristics becomes necessary for a better estimation of the underlying earnings gap. The next section presents computations of the earnings gaps between teachers (preschool and primary, and secondary) and other professionals and technicians after matching individuals according to their observable characteristics.

3. Earnings Changes at the turn of the 20th Century for teachers vis-à-vis other professionals and technicians

The extent to which the earnings differentials can be attributed to differences in observable characteristics is explored next. This is done using matching comparisons such that each teacher is paired with a professional or technician with the same observable characteristics (for methodological details see Ñopo, 2008). The characteristics are gender, age, education, presence of kids (12 or younger) in the household, presence of elders (65 or older) in the household, whether the workers is or not household head, presence of other wage earners in the household, whether the individual has a part-time work, and whether the individual holds a secondary job (all together will be referred as the "full set" of observable characteristics). These variables are sequentially added as matching variables and the results are reported in Figure 1. The decompositions are sequentially calculated for (i) pre-school and elementary teachers and (ii) high school teachers, for the first (circa 1997) and second (circa 2007) periods, vis-à-vis other professionals and technicians.

3.1 Evolution of Average Earnings Gaps (controlling for observable characteristics)

Figure 1 shows the drop in earnings gaps between the teaching groups and their comparing group of other professionals and technicians for the period under analysis (the panel "a" of the figure is for pre-school and elementary teachers and the panel "b" for high school teachers). All the earnings gaps are measured in terms of percentages of the average earnings of the teaching group that takes part on the comparison. The first pair of boxes, at the left, shows the gap that remains after matching teachers and non-teachers on gender only. That is, each male teacher is compared to a male professional or technician and each female teacher to a female professional or technician. Moving to the right each pair of boxes shows the gaps that remain after adding a matching variable. In this way, the last pair of boxes show the earnings gaps between teachers and other professionals and technicians that have the same observable characteristics on nine variables (gender, age, education, presence of children at home, presence of elders at home, an indicator for being a household head, an indicator for the presence of other income earner at home, part-time work and an indicator for holding more than one job). That is, when moving two

boxes to the right on Figure 1 the comparison gets restricted to individuals with the same observable characteristics, adding one characteristic at a time.

The figure shows a drop in earnings gaps that is more pronounced for pre-school and elementary teachers than for high school teachers. For the latter the drop in earnings gaps vis-à-vis other professionals and technicians is not statistically significant for almost all sets of matching characteristics.

Table 4 shows the same earnings gaps by country. Similarly to Figure 1, each pair of columns of the table corresponds to the earnings gap that remains after matching on a set of observable characteristics. Within each pair of columns, the first column corresponds to circa 1997 results and the second, circa 2007 results. The first pair of columns corresponds to the original earnings gap (the one that is measured with no matching at all). Moving to the right, each pair of columns add a matching variable such that in the last column of the table, teachers and other professionals and technicians being compared have the same observable characteristics on the nine variables.

Although some countries present negative original earnings gaps, unexplained earnings gaps after controlling for the full set of observable characteristics are either positive or statistically zero. Looking at each country separately it can be seen that the original earnings gap between pre-school and elementary teachers vis-à-vis other professionals and technicians decreased in most countries of the region but it did specially for Bolivia, Brazil and Dominican Republic. The only countries where such gap increased were Costa Rica and Ecuador. The gap regarding high school teachers markedly decreased for Bolivia, Brazil and Uruguay; the gap increased for Paraguay, Nicaragua and El Salvador. All in all, the original and unexplained earnings gaps dropped for both specifications of regions' average and for both pairs in comparison.

Figure 1. Confidence Intervals for the Unexplained Earnings Gap Controlling by Observable Characteristics
a.   Pre-School and Elementary School Teachers versus Other Professionals and Technicians
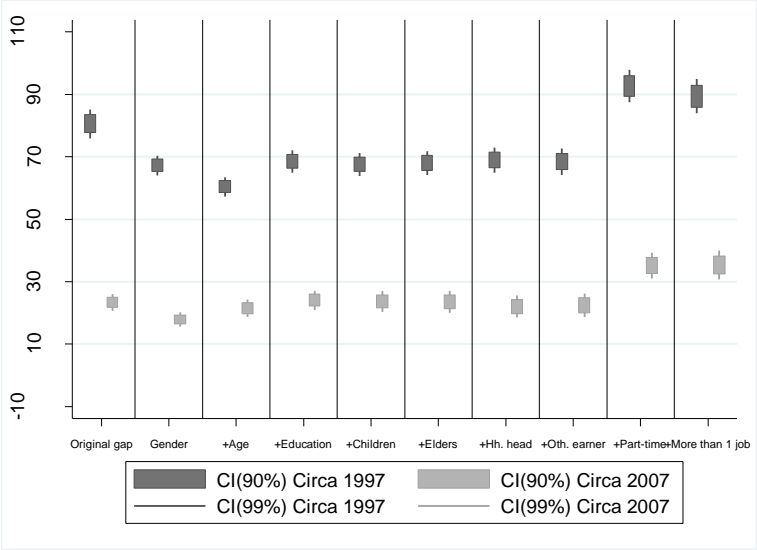
b.   High School Teachers versus Other Professionals and Technicians
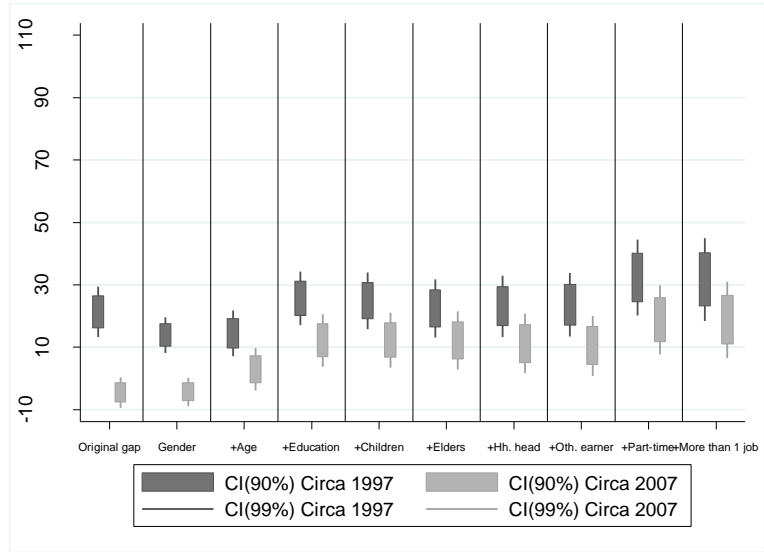
Source: Authors' calculations based on household surveys

Note: Boxes show 90 percent confidence intervals for unexplained earnings; whiskers show 99 percent confidence intervals.

Table 4
Unexplained Earnings Gap by Country Controlling by Observable Characteristics

Country	Original gap		+Gender		+ Age		+ Education		+ Children living in the household		+ Elders living in the household		+ Household head		+ Another wage earner living in the household		+ Part-time Work		+ Has more than one job	
	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07
Bolivia	81.2%	-20.4%	70.9% (0.05)	-23.9% (0.04)	69.9% (0.06)	-11.9% (0.06)	82.7% (0.07)	-1.9% (0.05)	87.4% (0.08)	1.5% (0.06)	87.5% (0.08)	0.1% (0.06)	84.7% (0.09)	-4.8% (0.06)	93.1% (0.1)	-3.0% (0.06)	108.9% (0.16)	28.4% (0.08)	94.5% (0.2)	33.5% (0.09)
Brazil	112.5%	27.0%	80.8% (0.02)	17.7% (0.01)	70.3% (0.02)	21.6% (0.01)	80.4% (0.02)	26.5% (0.02)	78.6% (0.02)	25.9% (0.02)	78.2% (0.02)	25.8% (0.02)	79.2% (0.02)	24.9% (0.02)	77.7% (0.02)	25.4% (0.02)	100.9% (0.03)	37.0% (0.02)	97.2% (0.03)	37.8% (0.02)
Chile	45.4%	36.3%	33.1% (0.02)	24.8% (0.02)	39.4% (0.03)	22.5% (0.03)	50.2% (0.04)	26.7% (0.05)	50.6% (0.05)	26.2% (0.05)	48.7% (0.05)	24.0% (0.05)	43.3% (0.05)	21.4% (0.05)	42.9% (0.05)	19.6% (0.05)	54.9% (0.06)	19.4% (0.05)	52.0% (0.06)	17.9% (0.05)
Costa Rica	-4.6%	-3.6%	-8.4% (0.03)	-1.0% (0.03)	-10.2% (0.05)	-1.0% (0.05)	-2.7% (0.06)	9.5% (0.07)	-11.4% (0.06)	9.3% (0.06)	-8.7% (0.07)	10.5% (0.06)	-11.9% (0.06)	11.0% (0.06)	-14.8% (0.07)	8.5% (0.06)	-17.9% (0.06)	13.8% (0.07)	-15.4% (0.06)	18.9% (0.08)
Dom. Rep.	78.1%	25.5%	62.2% (0.06)	19.3% (0.04)	63.8% (0.12)	24.1% (0.08)	55.4% (0.08)	32.7% (0.09)	55.3% (0.08)	36.6% (0.11)	52.7% (0.09)	25.0% (0.1)	47.2% (0.09)	15.0% (0.12)	52.8% (0.11)	18.2% (0.12)	59.8% (0.16)	25.6% (0.2)	43.2% (0.16)	23.2% (0.26)
Ecuador	9.0%	26.3%	8.8% (0.05)	23.7% (0.03)	7.9% (0.06)	26.6% (0.04)	9.4% (0.06)	14.1% (0.04)	8.6% (0.06)	17.3% (0.05)	8.9% (0.07)	19.9% (0.05)	12.0% (0.08)	16.9% (0.05)	10.7% (0.11)	17.4% (0.05)	29.1% (0.18)	35.3% (0.07)	33.5% (0.19)	28.4% (0.08)
El Salvador	-1.9%	-5.3%	-4.6% (0.03)	-5.9% (0.02)	-2.7% (0.04)	-0.3% (0.05)	-6.4% (0.04)	-10.1% (0.06)	-7.0% (0.04)	-6.9% (0.06)	-8.2% (0.04)	-13.0% (0.06)	-6.2% (0.05)	-11.7% (0.06)	-7.1% (0.05)	-17.2% (0.05)	12.1% (0.09)	4.6% (0.1)	11.3% (0.11)	5.6% (0.1)
Honduras	-0.9%	-17.9%	-10.1% (0.04)	-21.0% (0.03)	-11.7% (0.04)	-23.1% (0.03)	-10.6% (0.04)	-20.2% (0.04)	-9.6% (0.04)	-18.7% (0.04)	-9.7% (0.04)	-18.4% (0.04)	-6.5% (0.04)	-12.7% (0.05)	-5.5% (0.05)	-9.1% (0.05)	9.5% (0.07)	33.4% (0.1)	8.5% (0.07)	36.3% (0.12)
Nicaragua	112.4%	98.8%	90.8% (0.08)	91.2% (0.06)	80.1% (0.1)	84.3% (0.07)	65.3% (0.11)	56.2% (0.08)	52.5% (0.1)	51.8% (0.09)	70.6% (0.17)	50.1% (0.11)	71.3% (0.19)	43.5% (0.11)	66.9% (0.21)	32.9% (0.11)	139.6% (0.42)	49.3% (0.16)	151.8% (0.45)	57.3% (0.16)
Panama	37.5%	20.1%	30.4% (0.03)	17.2% (0.03)	34.2% (0.05)	19.1% (0.04)	22.9% (0.06)	22.0% (0.05)	21.2% (0.06)	18.3% (0.05)	17.7% (0.06)	20.6% (0.06)	13.5% (0.06)	23.7% (0.06)	16.7% (0.08)	22.5% (0.06)	29.2% (0.11)	25.8% (0.07)	24.1% (0.1)	24.6% (0.07)
Paraguay	75.0%	39.3%	62.9% (0.08)	46.4% (0.05)	33.3% (0.12)	45.6% (0.09)	4.0% (0.12)	17.1% (0.09)	6.1% (0.13)	6.0% (0.08)	5.8% (0.13)	-6.9% (0.08)	10.8% (0.15)	-0.5% (0.09)	-4.4% (0.1)	4.0% (0.11)	3.5% (0.18)	3.3% (0.15)	2.4% (0.24)	-3.4% (0.09)
Peru	36.4%	33.7%	29.0% (0.04)	24.5% (0.03)	35.6% (0.1)	33.0% (0.04)	33.5% (0.09)	37.8% (0.04)	29.5% (0.12)	35.0% (0.05)	29.9% (0.12)	36.8% (0.05)	29.7% (0.12)	29.2% (0.05)	25.4% (0.12)	26.1% (0.05)	43.8% (0.21)	45.6% (0.07)	50.3% (0.26)	42.4% (0.08)
Uruguay	42.9%	25.6%	30.6% (0.03)	30.7% (0.04)	33.1% (0.04)	26.6% (0.04)	57.5% (0.05)	-7.9% (0.04)	59.8% (0.05)	-9.1% (0.04)	62.5% (0.06)	-8.6% (0.04)	70.8% (0.07)	-12.8% (0.05)	66.3% (0.08)	-4.0% (0.06)	81.8% (0.09)	17.0% (0.08)	67.8% (0.1)	19.0% (0.11)
Latin America (13 countries)	80.5%	23.3%	67.2% (0.01)	17.9% (0.01)	60.4% (0.01)	21.5% (0.01)	68.5% (0.01)	24.0% (0.01)	67.6% (0.01)	23.7% (0.01)	68.0% (0.01)	23.5% (0.01)	68.9% (0.01)	22.0% (0.01)	68.4% (0.02)	22.5% (0.01)	92.7% (0.02)	35.1% (0.02)	89.4% (0.02)	35.3% (0.02)

Pre-School and Elementary Teachers vis-à-vis Other Professionals and Technicians

High School Teachers vis-à-vis Other Professionals and Technicians

Country	Original gap		+Gender		+ Age		+ Education		+ Children living in the household		+ Elders living in the household		+ Household head		+ Another wage earner living in the household		+ Part-time Work		+ Has more than one job	
	C-97	**C-07**	**C-97**	**C-07**	**C-97**	**C-07**	**C-97**	**C-07**	**C-97**	**C-07**	**C-97**	**C-07**	**C-97**	**C-07**	**C-97**	**C-07**	**C-97**	**C-07**	**C-97**	**C-07**
Bolivia	**35.1%**	**-17.9%**	30.7%	-18.9%	35.1%	-12.0%	43.2%	-2.6%	43.0%	-1.1%	48.6%	-0.7%	43.3%	5.5%	43.3%	0.0%	60.1%	13.7%	61.4%	17.1%
			(0.05)	(0.04)	(0.08)	(0.07)	(0.08)	(0.07)	(0.09)	(0.07)	(0.09)	(0.07)	(0.11)	(0.08)	(0.12)	(0.07)	(0.21)	(0.11)	(0.24)	(0.11)
Brazil	**23.9%**	**-3.2%**	15.5%	-6.5%	12.9%	0.6%	25.8%	9.7%	25.0%	10.6%	23.2%	10.6%	22.9%	9.5%	25.4%	8.9%	29.1%	14.2%	27.1%	16.4%
			(0.04)	(0.02)	(0.05)	(0.03)	(0.06)	(0.04)	(0.06)	(0.05)	(0.06)	(0.05)	(0.06)	(0.05)	(0.06)	(0.05)	(0.06)	(0.05)	(0.07)	(0.06)
Chile	**26.2%**	**5.6%**	21.1%	1.8%	28.5%	4.6%	61.2%	21.7%	57.7%	19.1%	55.0%	16.2%	51.3%	13.8%	50.7%	16.5%	54.8%	17.5%	52.2%	17.6%
			(0.04)	(0.04)	(0.06)	(0.08)	(0.09)	(0.13)	(0.09)	(0.11)	(0.09)	(0.1)	(0.09)	(0.1)	(0.09)	(0.09)	(0.11)	(0.09)	(0.11)	(0.08)
Costa Rica	**-12.0%**	**-13.6%**	-14.3%	-12.3%	-16.5%	-8.9%	-2.4%	2.3%	-7.0%	3.5%	-13.8%	0.8%	-13.2%	2.9%	-15.2%	5.1%	1.3%	17.9%	-10.7%	13.6%
			(0.05)	(0.04)	(0.09)	(0.09)	(0.13)	(0.12)	(0.15)	(0.11)	(0.15)	(0.1)	(0.15)	(0.1)	(0.17)	(0.11)	(0.23)	(0.13)	(0.26)	(0.11)
Dom. Rep.	**24.9%**	**13.1%**	22.9%	11.7%	26.1%	12.6%	26.4%	29.2%	30.9%	25.2%	34.2%	13.2%	28.2%	7.6%	19.2%	20.8%	18.0%	16.0%	66.0%	4.8%
			(0.18)	(0.07)	(0.22)	(0.23)	(0.21)	(0.24)	(0.28)	(0.23)	(0.31)	(0.25)	(0.31)	(0.28)	(0.28)	(0.3)	(0.42)	(0.31)	(0.58)	(0.38)
Ecuador	**-7.0%**	**-4.5%**	-7.1%	-5.7%	-15.4%	9.6%	-13.2%	14.0%	-16.1%	12.2%	-14.4%	16.5%	-38.4%	15.9%	-0.3%	16.4%	20.4%	41.4%	28.3%	29.3%
			(0.11)	(0.04)	(0.18)	(0.07)	(0.2)	(0.08)	(0.21)	(0.07)	(0.31)	(0.08)	(0.27)	(0.08)	(0.33)	(0.09)	(0.74)	(0.12)	(0.17)	(0.13)
El Salvador	**-0.9%**	**7.8%**	-0.7%	7.6%	-2.4%	6.5%	7.7%	33.7%	4.2%	7.0%	3.6%	-4.9%	2.9%	-8.0%	8.6%	-4.5%	-6.8%	-13.5%	-1.6%	-5.8%
			(0.12)	(0.06)	(0.2)	(0.23)	(0.21)	(0.58)	(0.24)	(0.22)	(0.22)	(0.19)	(0.21)	(0.19)	(0.26)	(0.2)	(0.15)	(0.23)	(0.18)	(0.16)
Honduras	**-22.2%**	**-19.0%**	-23.2%	-20.1%	-18.0%	-14.7%	0.8%	8.4%	-11.8%	4.9%	-17.9%	3.6%	-16.0%	10.2%	-12.5%	9.6%	-7.5%	30.9%	-2.4%	12.0%
			(0.06)	(0.04)	(0.08)	(0.07)	(0.11)	(0.1)	(0.09)	(0.09)	(0.1)	(0.09)	(0.1)	(0.1)	(0.11)	(0.1)	(0.09)	(0.17)	(0.09)	(0.13)
Nicaragua	**28.9%**	**60.9%**	23.4%	58.9%	51.0%	45.6%	111.5%	70.9%	125.6%	63.5%	121.0%	74.3%	132.2%	59.9%	47.3%	42.5%	28.2%	58.6%	28.2%	51.5%
			(0.16)	(0.08)	(0.29)	(0.17)	(0.33)	(0.25)	(0.4)	(0.23)	(0.42)	(0.28)	(0.58)	(0.25)	(0.83)	(0.33)	(0)	(0.38)	(0)	(0.42)
Panama	**-0.6%**	**-3.7%**	-2.1%	-4.3%	9.2%	-2.8%	24.8%	15.8%	23.0%	16.1%	22.8%	19.3%	25.3%	11.4%	29.4%	10.4%	33.1%	16.1%	37.9%	21.5%
			(0.03)	(0.03)	(0.06)	(0.05)	(0.07)	(0.06)	(0.08)	(0.06)	(0.07)	(0.07)	(0.09)	(0.07)	(0.11)	(0.07)	(0.11)	(0.07)	(0.13)	(0.08)
Paraguay	**6.5%**	**10.5%**	1.5%	13.4%	-11.1%	49.2%	-4.5%	41.5%	8.3%	39.5%	2.5%	37.3%	11.6%	41.0%	15.0%	-11.9%	92.1%	16.6%	-21.1%	40.9%
			(0.1)	(0.09)	(0.14)	(0.23)	(0.17)	(0.28)	(0.19)	(0.27)	(0.2)	(0.33)	(0.25)	(0.3)	(0.28)	(0.28)	(0.29)	(0.25)	(0.03)	(0.23)
Peru	**8.9%**	**4.7%**	6.9%	2.4%	12.8%	8.8%	12.5%	18.5%	10.5%	18.9%	2.2%	18.7%	7.0%	17.3%	-2.5%	16.0%	15.9%	43.2%	24.2%	42.4%
			(0.04)	(0.03)	(0.09)	(0.05)	(0.09)	(0.06)	(0.1)	(0.06)	(0.1)	(0.07)	(0.12)	(0.07)	(0.1)	(0.07)	(0.14)	(0.1)	(0.18)	(0.13)
Uruguay	**44.0%**	**16.9%**	38.7%	19.0%	38.2%	17.1%	44.6%	-9.0%	41.9%	-6.5%	40.9%	-7.2%	44.6%	-6.0%	46.5%	-0.1%	62.1%	2.3%	62.5%	12.5%
			(0.05)	(0.04)	(0.07)	(0.05)	(0.08)	(0.06)	(0.08)	(0.06)	(0.09)	(0.06)	(0.1)	(0.07)	(0.1)	(0.09)	(0.12)	(0.09)	(0.13)	(0.11)
Latin America	**21.4%**	**-4.5%**	13.9%	-4.3%	14.4%	3.0%	25.7%	12.2%	24.9%	12.2%	22.5%	12.2%	23.1%	11.2%	23.6%	10.5%	32.4%	18.8%	31.7%	18.8%
(13 countries)			(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)	(0.04)	(0.05)	(0.05)

Source: Authors' calculations based on household surveys
Note: Standard errors in parentheses

The drops in unexplained earnings gaps can arise either as a result of a general trend of gaps decreasing in the segments considered of the labor markets (that is, those for professionals and technicians, where teachers are involved), or can also be the result of changes over time of the distribution of individuals' observable characteristics. To further explore the effects of labor market trends versus changes in labor markets composition, Table 5 presents a "matching after matching" exercise (Ñopo and Hoyos, 2010) disentangling both. The first stage of matching is performed with the full set of observable characteristics, matching teachers with other professionals and technicians in both moments under consideration (circa 1997 and circa 2007), as it has already been performed. After that, the matching after matching exercise is performed for the two matched sets of workers, matching the circa 1997 data with the one from circa 2007. In this way not only teachers and non-teachers show no differences in observable characteristics, but also they show no changes in the distribution of those characteristics during the period under analysis. The results, shown in Table 5, indicate that there is more evidence of a general trend of decreasing gaps than one of an improvement of teachers' characteristics. The change in earnings gaps due to changes in the distributions of observable characteristics is positive and higher for pre-school and elementary teachers, but compensated by the change in the counterfactual component.

Table 5. Decomposition of the Change in Unexplained Earnings Gap circa 2007- circa 1997
(after Controlling by the Full Set of Observable Characteristics)

	Counterfactual Change if no Change in X's	Part of the Change due to Change in X's	Total Change
Pre-school and Elementary Teachers vis-à-vis	-65.3%	11.2%	-54.1%
Other Professionals and Technicians	(0.04)	(0.00)	(0.00)
High School Teachers vis-à-vis Other	-22.0%	9.0%	-13.0%
Professionals and Technicians	(0.07)	(0.00)	(0.00)

Source: Authors' calculations based on household surveys.

3.2 Changes in the Distribution of the Unexplained Earnings Gap

After matching individuals on the basis of observable characteristics it is possible to explore not only the average but also the distribution of the earnings gaps in each period. In general, as reported in Mizala and Ñopo (2011), pre-school and elementary school teachers' underpayment is more pronounced among older and more educated workers, household heads, part-time workers, and those who report having more than one job. As reported in Table 5, during the period under analysis there is evidence of a general trend over all the labor markets for a reduction of earnings gaps. Within this matching exercise, nonetheless, it is possible to explore the segments of the

labor markets for which the drops in gaps have been more pronounced. The bigger drops in earnings gaps for pre-school and elementary teachers occurred among younger individuals, those with higher education (secondary complete or more), with no elders at home, part-time workers and those with no secondary jobs. For high school teachers, the earnings gaps are more pronounced among household heads and those holding more than one job. Among these teachers there is no particular segment of the market for which the gap dropped particularly more than the rest. [4]

Figure 2 shows the unexplained earnings gaps along the individuals' earnings distribution. The first panel of it shows the unexplained earnings gap that pre-school and elementary school face in comparison to other professionals and technicians; the second panel does it for high school teachers. Both show that the earnings gap between teachers and comparable workers in Latin America are driven by pay differences at the top percentiles of the earnings distribution. In this regard there is no much cross-country heterogeneity.[5]

This first panel of Figure 2 evidences that, after controlling by the full set of observable characteristics, there are no major differences in hourly earnings between pre-school and elementary teachers and other professional and technicians for the bottom third of the population circa 2007. The second panel depicts similar results, with smaller changes between circa 1997 and 2007.

Figure 2. Unexplained Earnings Gaps along Percentiles of the Earnings Distribution
(after Controlling by the Full set of Observable Characteristics)
a.   Pre-School and Elementary Teachers vs. Other Professionals and Technicians

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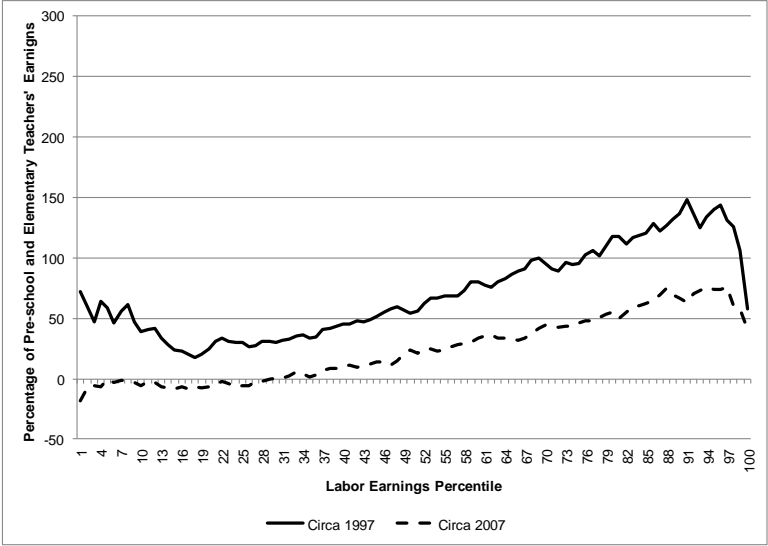
[4] Confidence intervals for the unexplained earnings gap between teachers and non-teachers by different characteristics, after controlling by the full set, can be found on Figures A1 and A2 of the Appendix.
[5] Country-by-country results of the unexplained earnings gaps along percentiles of the earnings distribution are not shown here but these are available from the authors upon request.

b.   High School Teachers vs. Other Professionals and Technicians
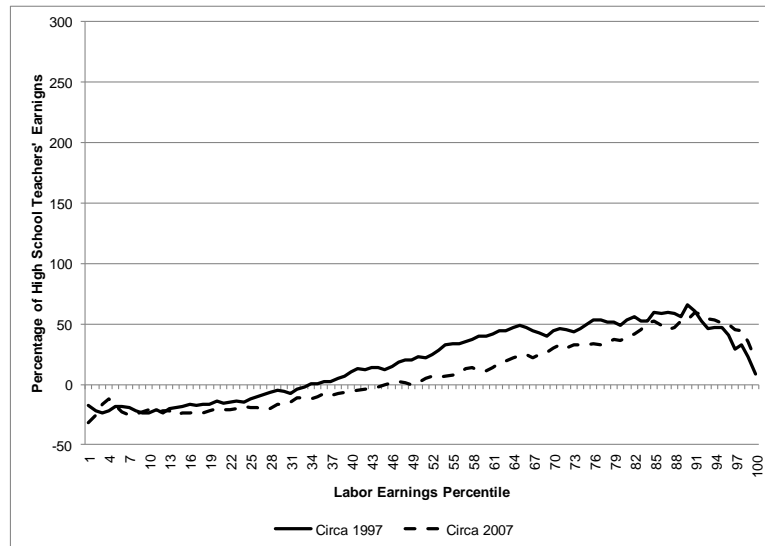
Source: Authors' calculations based on household surveys

3.3 Exploring the Role of Amenities: Schedules, Vacations, Secondary Jobs and Tenure

"Typical policy discussions about the choice of a teaching career highlight the extra amenities that come with a teaching job. Two of the most salient of those amenities are the shorter (and flexible) job schedules, on the one hand, and the more stability that the profession enjoys, on the other. As it is typical in economics, these extra amenities have to come at a price. In this case such price would be expressed in terms of earnings disparities between teachers and their peers." (Mizala and Ñopo, 2011). The shorter and flexible job schedules at the teaching profession imply, in turn, extra freedom for the possibility of holding a second job. As a matter of fact, in Table 2 we showed that while more than half of the teachers work part-time at their main job (30 hour per week or less) it is only around one-fifth of other professionals and technicians who do so. Not only that, but also the share of teachers who report having a secondary job is higher than that of other professionals and technicians, especially for those teaching at the high school level.

With these considerations we analyze the role of job schedules going beyond the measurement of earnings gaps in hourly terms. We explore earnings gaps in monthly and yearly earnings. These earnings are measured in terms of purchasing power parity (PPP, US$ 2000) as well. Monthly earnings correspond to the monthly income received in the main occupation (i.e., the monthly value of hourly earnings). Yearly earnings try to capture the fact that job-breaks are not the same across occupations, but since information about vacation periods is not available in the household surveys we built a proxy. Yearly earnings are computed as follows: for teachers, we assume a two-month paid vacation period so that teachers monthly earnings are multiplied by a 12/10 ratio; for other professionals and technicians dependent workers we assume a one-month paid vacation period so that monthly earnings are multiplied by a 12/11 ratio; and for independent workers we assume no paid vacations so that their monthly earnings are multiplied by 12/12=1.

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Table 6 presents earnings gap decompositions for monthly and yearly earnings, for pre-school and elementary school teachers and for high school teachers (in both cases, vis-à-vis other professionals and technicians). First, provided teachers report working less hours per month (or per week) than their counterparts at their main occupation it comes at no surprise that that monthly earnings gaps are higher than the hourly eanrings gaps previously reported in Table 4, both at their original measure and at the one that remains after controlling for the full set of observable characteristics. Second, provided the proxy-adjustment of yearly earnings "inflate" teachers' earnings (with respect to that of other professionals and technicians), it also comes at no surprise that the measure of yearly earnings gaps is smaller than the one for monthly earnings gaps. The result arises simply by construction. Third, these proxied measures of yearly earnings gaps are also bigger than the hourly earnings gaps in Table 4. Furthermore, a measure of hourly earning gaps that adjusts by the differential vacations (as proxied on the yearly measures) delivers, by construction, earnings gaps that are smaller than the hourly earnings gaps reported in Table 4, and are still positive and statistically significant (this last result is not shown here but available upon request).

Table 6. Unexplained Earnings Gaps Controlling by the Full set of Observable Characteristics
(by different measures of earnings at the main occupation)

	Monthly earnings				Yearly earnings			
	Original gap		Full set		Original gap		Full set	
	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07
Pre-School and Elementary Teachers vis-à-vis Other Professionals and Technicians								
Region average	**145.0%**	**64.7%**	96.1% (0.03)	58.8% (0.02)	**119.3%**	**47.5%**	75.0% (0.03)	42.0% (0.02)
High School Teachers vis-à-vis Other Professionals and Technicians								
Region average	**61.8%**	**25.4%**	66.4% (0.08)	47.9% (0.06)	**44.8%**	**12.3%**	47.1% (0.07)	32.4% (0.05)

Source: Authors' calculations based on household surveys.
Note: Standard errors in parentheses.

Table A2 (in the Appendix) shows the results of Table 6 dissagregated by country. There it can be seen that the higher gaps for monthly and yearly earnings (vis-à-vis those measured in hourly terms) hold for most countries in the region. Chile and, to a lesser extent, Panama are interesting exceptions as in these countries the gaps in yearly terms are similar to those originally measured in hourly terms. This reflects that the number of hours worked per week by teachers is not so different than the number of hours worked by other professional and technicians. In these two countries this claimed amenity of shorter job schedules is not so prevalent, and this is specially the case for the most recent data circa 2007. For other countries, after controlling for part-time work, the gaps in yearly terms and the gaps in hourly terms reach similar values as well.

Next, we incorporate into the analysis an extra possibility that teachers enjoy regarding their use of their time, the holding of a second job. As highlighted in Table 2, teachers' propensity to have a second job is higher than that of other professionals and technicians, especially for those teaching at the high-school level (for this later group almost one in four teachers have a second job). This expands the income generation possibilities for teachers and may also be considered as an amenity linked to the profession. So analyze next the earnings gaps in labor income for the main and secondary sources.

Many countries within our data report the existence of second jobs but only in six of them it is possible to obtain data for earnings, hours worked per week and type of activity in the second job: Bolivia, Brazil, Costa Rica, Ecuador, Nicaragua and Paraguay. The next part of the analysis will then focus on these countries. The sample drops dramatically as a result of two combined restrictions on the data. First, this sample of six countries approximately constitutes 75% of the observations that have been used for the previous results. Second, within the six countries we restrict attention to those individuals who hold a second job and have information on earnings, hours worked per week and type of activity in the second job. This implies restricting the sample to approximately 15% of workers in these 6 countries. Combining the two restrictions, the resulting sample represents around 12% of the original teachers sample circa 1997 and circa 2007, 8% of the original non-teachers sample circa 1997 and 6% circa 2007. Brazil becomes utterly representative, holding around 85% of the observations in both periods. Also, the share of household heads and (as expected) part-time workers is higher in this sub-sample in comparison to the original sample.[6]

Table 7 shows selected descriptive statistics for the sub-sample. The upper panel of the table (main job) depicts two important patterns that are in line with what was previously reported in Table 3. First, part-time workers at their main job earn more than those who are not, and a greater share of teachers report working part time. Second, to an important extent the drops in earnings gap at the main job are due to a drop in relative earnings for other professional and technicians. The intermediate panel of the table shows data from the second job. Two results emerge. First, to an important extent (with the exception of high school teachers circa 2007) the second job of teachers tends to be at another teaching position. Second, earnings gaps at second jobs did not change as much as they did for main jobs, and this is mainly a consequence of the relative improvement of other professionals and technicians' earnings during the period. The bottom panel of Table 7 shows descriptive statistics for main and secondary jobs combined (i.e., earnings are equal to the sum of main job and second job monthly earnings). The evidence still points towards a higher number of working hours, and higher earnings, for non-teachers than for teachers.

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[6] These results are not reported here but available upon request.

Table 7. Descriptive Statistics
(6 countries with data on second job)

Sub-sample of workers that reported having a secondary job, the related activity, earnings and hours worked per week in this second job						
	Pre-School and Elementary		High School Teachers		Other Professionals and	
	Circa 1997	*Circa 2007*	*Circa 1997*	*Circa 2007*	*Circa 1997*	*Circa 2007*
Main Job						
Part-time work						
Region Average	76.9%	76.9%	58.6%	65.5%	50.6%	43.5%
Average hourly earnings (part-time workers)*						
Region Average	90.3	94.9	127.3	120.3	259.3	193.8
Average hourly earnings (non part-time workers)*						
Region Average	74.5	74.9	112.3	93.1	187.2	158.5
Second Job						
Second job involves school-teaching activities						
Region Average	64.3%	67.3%	61.5%	33.6%	11.8%	1.8%
Average hourly earnings in second job*						
Region Average	98.2	107.3	179.0	140.3	233.8	278.8
Main and Second Jobs (combined)						
Average hours worked per week in main and second jobs						
Region Average	46.2	46.7	47.7	48.3	53.3	52.8
Works over-time (50 hours a week or more)						
Region Average	41.5%	40.8%	48.0%	49.6%	64.0%	64.6%
Average monthly earnings in main and second jobs**						
Region Average	86.2	157.3	138.9	203.4	254.3	353.2
Observations	581	686	235	394	1113	2084
Expanded Observations	242672	305354	85904	147614	413246	812217

Source: Authors' calculations based on household surveys.
* Average school teacher earnings in main job circa 1997 in each Country=100
** Average school teacher monthly earnings in main and second jobs (combined) circa 1997 in each Country=100

Table 8 shows the original and the unexplained earnings gap for main and secondary job (using hourly earnings), and the combination of both (using monthly earnings). Since we are restricting the sample to those workers that report having a second job, the "Full Set" specification does not include the "more than on job" variable. Additionally, we add another control variable: whether the worker's second job is related to school teaching or not after controlling by the full set of observable characteristics. The unexplained hourly earnings gaps at the second job are also positive but smaller than those at the main job for both periods. Both, the gaps at the main and second jobs decreased during the period but the drops are not statistically significant (perhaps due to the dramatic reduction in the sample size for this exercise with six countries and second job holders). The gaps in monthly earnings combining the two sources of income are not statistically different than the gaps in monthly earnings solely measured at the main job in Table 6. For this latter there is also evidence that the gap decreased but this is not statistically significant.

Adding the control for teaching activities at the second job does not change much the unexplained earnings gaps. Teachers in their second jobs, being those involved or not with teaching duties, face earnings gaps vis-à-vis other professionals and technicians. This may reflect the existence of some

individuals' unobservable characteristics (or abilities) that the labor markets reward for which teachers fare worse than their peers. This last result may call for some action rewarding selection policies for high ability individuals into the teaching profession.

Table 8. Unexplained Earnings Gap Controlling by the Full set of Observable Characteristics and Teaching in the Second Job
(6 countries with data on second job)

	Hourly Earnings										Full Monthly earnings					
	Main Job				Second Job						Main and Second Job Combined					
	Original gap		Full set*		Original gap		Full set*		+ Second job: school teacher		Original gap		Full set*		+ Second job: school teacher	
	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07
Pre-School and Elementary Teachers vis-à-vis Other Professionals and Technicians																
Region average	**187.0%**	**104.4%**	120.3% (0.1)	97.2% (0.11)	**138.2%**	**159.6%**	93.2% (0.1)	79.9% (0.08)	70.2% (0.2)	72.3% (0.19)	**195.0%**	**125.0%**	99.7% (0.09)	85.6% (0.06)	81.3% (0.18)	92.2% (0.14)
High School Teachers vis-à-vis Other Professionals and Technicians																
Region average	**103.7%**	**61.1%**	97.9% (0.21)	74.8% (0.14)	**30.7%**	**98.7%**	57.0% (0.19)	54.3% (0.2)	13.3% (0.37)	57.5% (0.3)	**83.0%**	**73.6%**	87.9% (0.19)	64.2% (0.12)	73.3% (0.35)	65.0% (0.16)

Source: Authors' calculations based on household surveys.
Standard errors in parentheses
* The Full Set specification does not include the variable "more than one job" as we are restricting our comparison to those who report having a second job.

The other amenity we explore in this sub-section is tenure. It has been typically claimed that the teaching profession entails more job stability than others. This may in turn convert into a compensating differential that teachers are willing to accept in the form of lower salaries. Next we assess the role of job tenure on the earnings gaps. Job tenure is defined here as the approximate number of years an individual has remained in the same job at the moment of the survey. As in the previous case with second jobs, this analysis cannot be performed for the thirteen countries of the original analysis. Data on job tenure is available in seven countries: Bolivia, Brazil, Honduras, Nicaragua, Panama, Paraguay and Uruguay. Restricting the data to these countries implies using 77% of the original data for teachers circa 1997 and 76% circa 2007; as well as 62% and 74% of the non-teachers' group for circa 1997 and circa 2007 respectively. No descriptive statistic within this restricted data set is significantly different than those reported in table 2 for the set of thirteen countries.

Figure 3 presents Kernel density estimations of job tenure for teachers and other professionals and technicians for the two years under analysis. It can be highlighted from that figure that, in fact, teachers enjoy a positive tenure gap vis-à-vis other professional and technicians. Additionally, such gap became more pronounced circa 2007. Both teaching groups increased their average tenure (by 1.7 years for pre-school and elementary teachers and by 1.5 years for school teachers) but the non-teaching group decreased it (by 0.6 years). Such widening of the tenure gap goes in line with the fact that, as shown in table 2, teachers became older during this period. As a matter of fact, average age increased, on the one hand, by 4.4 years for pre-school and elementary teachers and by 3.3 years for high school teachers; and on the other hand it only increased by 0.3 years for other professionals and technicians. All these inter-temporal average changes are statistically significant at the 1% level.

Figure 4 presents the non-parametric regressions of tenure on earnings. The figure shows that other professional and technicians earn more than teachers in both periods and such differences appear to increase with tenure. These results hold for every country considered. Nevertheless, this analysis does not take into account the role of observable characteristics. For that reason, we perform a matching exercise that controls for differences in observable characteristics next.

Table 9 shows the earnings gaps decompositions for pre-school and elementary school teachers and for high school teachers (vis-à-vis other professionals and technicians) using the current data subset, adding job tenure as a control variable. Adding job tenure as a control variable reduces the earnings gap for preschool and elementary teachers in both periods and for all specifications. These results give credence to the idea that job stability acts as a compensating differential. For high school teachers the gap declines after adding job tenure as a control circa 2007; but circa 1997 it increases. These results suggest that job stability has higher intrinsic value nowadays. Table A3 (Appendix) depicts similar results by country. These results, however, must be taken with caution due to the smaller sample size and (especially due to) the smaller size of the common support.
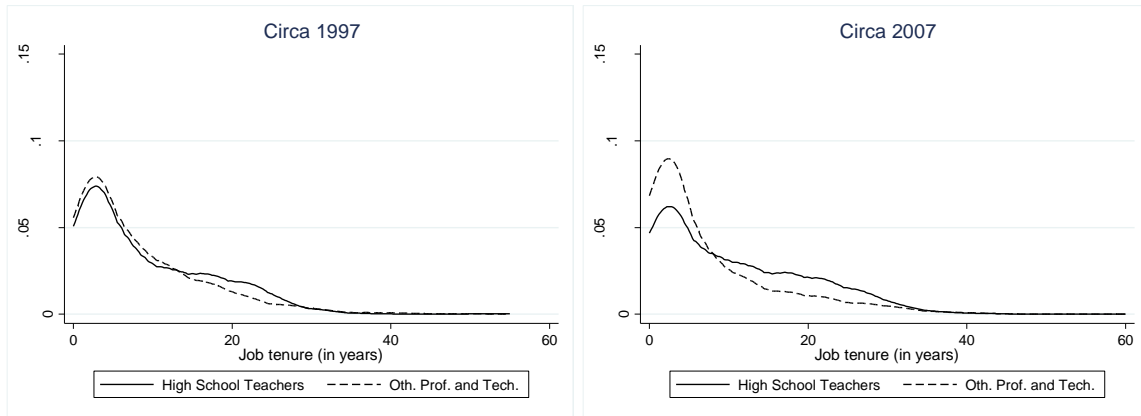
Figure 3. Estimated Kernel Distributions of Job Tenure
(7 countries with data on job tenure)

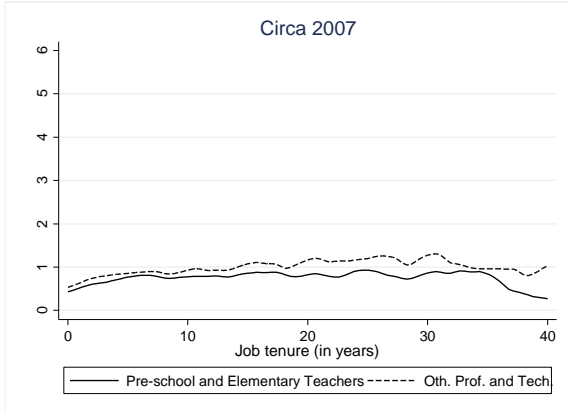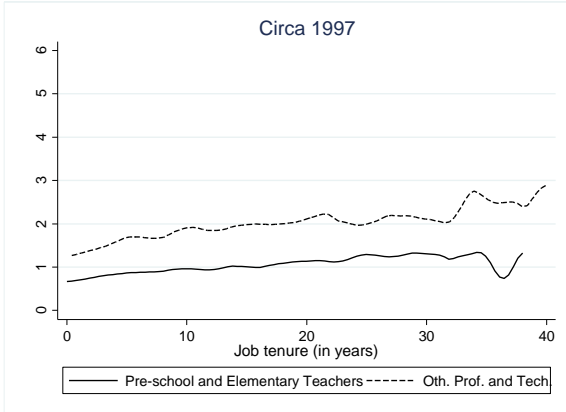**a. Pre-School and Elementary Teachers vs. Other Professionals and Technicians**
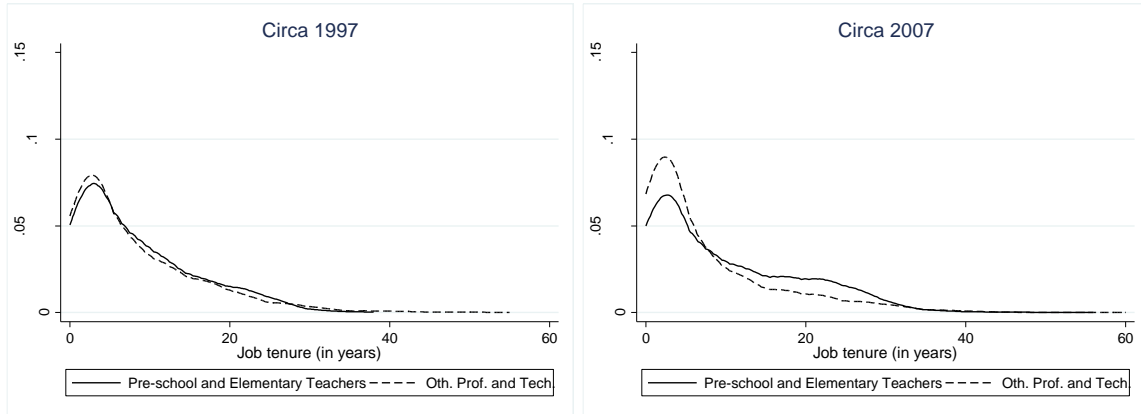
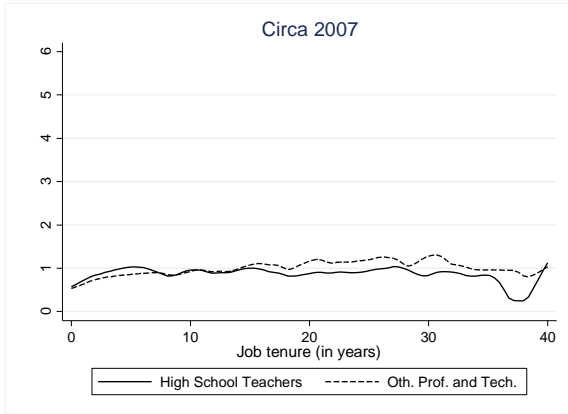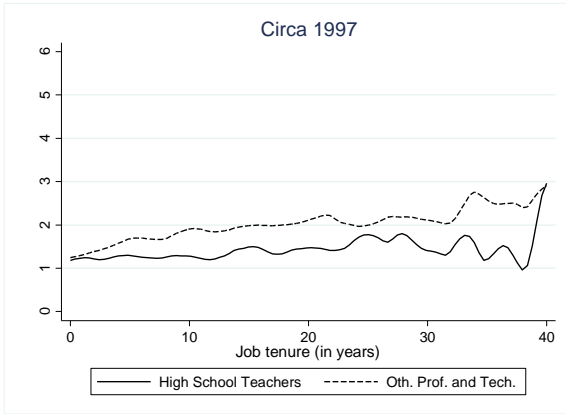**b.** **High School Teachers vs. Other Professionals and Technicians**

Source: Authors' calculations based on household surveys
Bandwidth: 2

Figure 4. Estimated Kernel Regression Functions: Hourly Earnings vs. Job Tenure
(7 countries with data on job tenure)
a. Pre-School and Elementary Teachers vs. Other Professionals and Technicians

23

Circa 1997

Circa 2007

Job tenure (in years)

Pre-school and Elementary Teachers — — — Oth. Prof. and Tech.

Job tenure (in years)

Pre-school and Elementary Teachers — — — Oth. Prof. and Tech.

b. **High School Teachers vs. Other Professionals and Technicians**

Circa 1997

Circa 2007

Job tenure (in years)

High School Teachers — — — Oth. Prof. and Tech.

Job tenure (in years)

High School Teachers — — — Oth. Prof. and Tech.

Source: Authors' calculations based on household surveys
Bandwidth: 2

Table 9. Unexplained Earnings Gaps after Controlling by the Full set of Observable Characteristics and Job Tenure
(7 countries with data on job tenure)

	Hourly earnings						Monthly earnings						Yearly earnings					
	Original gap		Full set		+ Tenure		Original gap		Full set		+ Tenure		Original gap		Full set		+ Tenure	
	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07
Pre-School and Elementary Teachers vis-à-vis Other Professionals and Technicians																		
Region average	104.4%	24.7%	95.8% (0.02)	37.3% (0.02)	87.6% (0.05)	33.0% (0.03)	177.9%	66.1%	108.6% (0.03)	43.3% (0.02)	103.6% (0.06)	43.0% (0.04)	148.3%	48.6%	86.0% (0.03)	28.0% (0.02)	81.7% (0.05)	28.9% (0.04)
High School Teachers vis-à-vis Other Professionals and Technicians																		
Region average	25.6%	-2.7%	29.1% (0.06)	16.7% (0.06)	45.6% (0.09)	13.0% (0.07)	64.3%	20.9%	45.7% (0.08)	22.8% (0.07)	53.2% (0.11)	18.7% (0.09)	46.7%	8.1%	29.7% (0.07)	9.8% (0.06)	38.2% (0.1)	6.8% (0.08)

Source: Authors' calculations based on household surveys.
Note: Standard errors in parentheses.

Conclusions

This paper examines whether teachers' earnings in Latin America are similar to those of other professionals and technicians, and how these earnings gaps evolved between circa 1997 and circa 2007. Since the available empirical evidence has shown that the sign and magnitude of the conditional earnings differential between teachers and other workers depend crucially on the definition of the comparison group, we build upon the results of Ñopo and Mizala (2011) using the methodology developed in Ñopo (2008). This approach emphasizes earnings differences in the supports of the distributions of observable characteristics and provides insights into the distribution of unexplained pay differences, which nurtures our comparison between periods. Furthermore, using the matching after matching approach we were able to provide further insights on the change of the earnings gap during the decade under analysis.

The results show that teachers are underpaid vis-à-vis other professionals and technicians in Latin America in both periods: circa 1997 and circa 2007; however, these gaps decreased. Nonetheless, there is an important cross-country heterogeneity behind the region averages. In particular, Brazil affects greatly the region averages due to its size. Despite this, the main conclusions hold if we include Brazil or not: High school teachers are more educated than other professionals and technicians but their years of education are not properly rewarded in the labor market. Working part-time is a characteristic that explains teachers' underpayment –pre-school and elementary school teachers enjoy greater flexibility in the work; moreover, job tenure and job schedules have an important role in explaining the earnings gap: the first is positively related with the earnings gap, and the second states that not considering job-brake periods (vacations) may lead to overestimate the earnings gap. Teachers' lower earnings are being compensated through lower effective labor in the main job, which not only eases prospects of having a family but also eases the decision of having/finding a second job, accepting the possibility of lower (main job) earnings.

Although being able to work part-time is a major reason behind the decision of having a second job, is important to explore further this possibility; in fact, a greater share of teachers report having a second job. We find that teachers are also being underpaid in their second job vis-à-vis other professionals and technicians, although these differences are smaller than in their main job, and decreased throughout the decade. Even though these results suggest that having a second job acts as a compensating differential, the data set for this analysis is very small and will be hard to conclude in this respect and other results obtained.

In general we found that the earnings gap decreased for each of the segments of the population provided by the control variables. Even more interesting, preschool and elementary teachers' earnings gap decreased importantly during the decade, especially for those who are females, younger and work part-time. Furthermore, in the hypothetical situation of no changes over time in the distribution of characteristics, results suggest an important decrease in the earnings gaps driven by the unexplained component of the gap, particularly for pre-school and primary teachers. All in all, the analysis performed provides evidence that the wage gap decreased during the ten

year span of analysis, driven by the change in preschool and primary teachers' underpayment throughout the time span and a decrease in non-teachers real income.

Moreover, important differences along the earnings distribution were found. Teachers in the highest percentiles of the earnings distribution earn less than other professionals and technicians, however, these earnings differences decreased throughout the decade. At the same time, teachers in the bottom percentiles tend to have similar or higher earnings than comparable workers. This can be explained because in many countries teachers are rewarded trough a single salary schedule which implies a salary structure much more compressed than the one of other professionals and technicians.

This salary structure is appealing to teachers as a fair way to compensate everyone, because it does not make distinctions that might disturb relationships among them. In this scheme equal pay is provided regardless of differing efforts and abilities; salaries are unrelated to the activities performed at the schools; being seniority and, to a lesser extent, the level of education the primary basis for any pay increase, which means that in the teaching profession loyalty rather than actual job performance is rewarded.

This system implies that the teaching profession probably attracts people with a preference for job stability and security, and at the same time equal pay regardless of performance penalizes the highly effective teachers who should be earning more. Thus, the single salary schedule might not be attractive to high performing teachers. For this reason, several countries are reforming traditional systems of recruiting teachers as well as mechanisms of paying and rewarding them, in order to attract and retain highly qualified individuals into teaching, and to get teachers to work hard to raise student learning (OECD, 2009).

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Table A1. Occupational Codes Included in the Definition of Teachers and Comparison Groups

Country	Codes	
	Circa 1997	Circa 2007
Bolivia		
Pre-School and Elementary Teachers	334, 335*	233, 331, 332
High School Teachers	333*	232
Other Professionals and Technicians	Major groups 1 and 2*	Major groups 2 and 3
Brazil		
Pre-School and Elementary Teachers	214-217*	2311, 2312, 2313, 3311**
High School Teachers	213, 218*	2321, 3313**
Other Professionals and Technicians	Major groups 1 and 2*	Major groups 2 and 3**
Chile		
Pre-School and Elementary Teachers	233, 331, 332	233, 331, 332
High School Teachers	232	232
Other Professionals and Technicians	Major groups 2 and 3	Major groups 2 and 3
Costa Rica		
Pre-School and Elementary Teachers	62, 63*	233, 331, 332
High School Teachers	61*	232
Other Professionals and Technicians	Major group 0*	Major groups 2 and 3
Dominican Republic		
Pre-School and Elementary Teachers	233, 331, 332	233, 331, 332
High School Teachers	232	232
Other Professionals and Technicians	Major groups 1 and 2	Major groups 2 and 3
Ecuador		
Pre-School and Elementary Teachers	233, 331, 332	233, 331, 332
High School Teachers	232	232
Other Professionals and Technicians	Major groups 1 and 2	Major groups 2 and 3
El Salvador		
Pre-School and Elementary Teachers	233, 331, 332	233, 331, 332
High School Teachers	232	232
Other Professionals and Technicians	Major groups 2 and 3	Major groups 2 and 3
Honduras		
Pre-School and Elementary Teachers	1249, 1273***	233, 331, 332
High School Teachers	1231***	232
Other Professionals and Technicians	Major group 0 and 1***	Major groups 2 and 3
Nicaragua		
Pre-School and Elementary Teachers	233, 331, 332	233, 331, 332
High School Teachers	232	232
Other Professionals and Technicians	Major groups 2 and 3	Major groups 2 and 3
Panama		
Pre-School and Elementary Teachers	200-207*	291-297
High School Teachers	189-199*	279-290
Other Professionals and Technicians	Major group 0*	Major groups 2 and 3
Paraguay		
Pre-School and Elementary Teachers	380-387*	233, 331, 332
High School Teachers	360-370*	232
Other Professionals and Technicians	Major group 0*	Major groups 2 and 3
Peru		
Pre-School and Elementary Teachers	243, 244****	243, 244****
High School Teachers	242, 246****	242, 246****
Other Professionals and Technicians	Major groups 1 and 2***	Major groups 1 and 2*
Uruguay		
Pre-School and Elementary Teachers	62, 63*	233, 331, 332
High School Teachers	61*	232
Other Professionals and Technicians	Major group 0*	Major groups 2 and 3

* Correspond to the occupational codes registered in MECOVI data bases
** Correspond to the "Composição dos Grupamentos Ocupacionais"
*** Correspond to the CELADE occupational codes of 1988
**** Correspond to the INEC occupational codes of 1996
Note: all other occupational codes correspond to the ISCO-88 classification

Table A2. Unexplained Earnings Gaps Controlling by the Full set of Observable Characteristics, by Country (by different measures of earnings)

	Pre-School and Elementary Teachers vis-à-vis Other Professionals and Technicians							
	Monthly earnings				Yearly earnings			
Country	Original gap		Full set		Original gap		Full set	
	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07
Bolivia	**194.4%**	**34.7%**	149.4% (0.3)	46.9% (0.09)	**163.3%**	**20.9%**	123.2% (0.27)	32.6% (0.08)
Brazil	**187.4%**	**67.2%**	110.3% (0.03)	43.4% (0.03)	**156.6%**	**49.5%**	87.4% (0.03)	28.1% (0.02)
Chile	**77.4%**	**51.3%**	63.1% (0.07)	23.2% (0.06)	**59.9%**	**36.2%**	47.2% (0.07)	11.3% (0.05)
Costa Rica	**10.5%**	**15.9%**	-14.4% (0.07)	32.7% (0.1)	**-0.7%**	**4.6%**	-23.2% (0.06)	20.1% (0.09)
Dom. Rep.	**103.8%**	**65.1%**	65.4% (0.22)	49.8% (0.31)	**82.4%**	**48.3%**	46.8% (0.2)	33.6% (0.29)
Ecuador	**46.0%**	**74.2%**	79.5% (0.46)	31.7% (0.1)	**32.7%**	**56.7%**	62.3% (0.42)	20.3% (0.1)
El Salvador	**45.4%**	**20.9%**	16.2% (0.13)	8.8% (0.13)	**31.2%**	**9.0%**	4.4% (0.12)	-2.0% (0.12)
Honduras	**23.8%**	**20.4%**	13.5% (0.08)	28.7% (0.1)	**12.1%**	**8.2%**	3.1% (0.08)	15.9% (0.09)
Nicaragua	**189.9%**	**157.0%**	88.0% (0.24)	85.5% (0.21)	**161.5%**	**132.0%**	71.0% (0.21)	67.7% (0.2)
Panama	**69.9%**	**31.4%**	34.2% (0.12)	35.4% (0.08)	**54.0%**	**18.7%**	21.5% (0.11)	22.2% (0.07)
Paraguay	**92.7%**	**61.8%**	19.6% (0.22)	15.2% (0.12)	**72.0%**	**45.2%**	6.9% (0.2)	3.7% (0.11)
Peru	**106.2%**	**82.5%**	58.9% (0.35)	49.5% (0.09)	**85.4%**	**64.3%**	41.1% (0.32)	34.1% (0.08)
Uruguay	**100.1%**	**74.6%**	74.2% (0.13)	9.9% (0.11)	**78.3%**	**56.0%**	54.4% (0.12)	-2.1% (0.1)
Latin America (13 countries)	**145.0%**	**64.7%**	96.1% (0.03)	58.8% (0.02)	**119.3%**	**47.5%**	75.0% (0.03)	42.0% (0.02)

High School Teachers vis-à-vis Other Professionals and Technicians								
	Monthly earnings				Yearly earnings			
Country	Original gap		Full set		Original gap		Full set	
	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07
Bolivia	158.7%	45.1%	91.7% (0.34)	28.4% (0.11)	131.4%	30.3%	70.1% (0.31)	15.9% (0.11)
Brasil	58.4%	18.4%	42.9% (0.09)	21.9% (0.07)	41.4%	5.8%	27.5% (0.08)	9.1% (0.06)
Chile	53.8%	11.4%	71.5% (0.14)	13.7% (0.1)	38.6%	0.3%	53.7% (0.13)	2.7% (0.09)
Costa Rica	7.8%	6.4%	-6.0% (0.27)	27.5% (0.13)	-3.0%	-4.0%	-15.7% (0.25)	14.7% (0.12)
Dom. Rep.	31.3%	24.1%	153.0% (0.93)	18.9% (0.41)	17.5%	11.4%	112.0% (0.78)	6.9% (0.36)
Ecuador	35.5%	39.8%	43.2% (0.38)	50.2% (0.19)	23.2%	25.7%	32.7% (0.36)	34.7% (0.17)
El Salvador	50.2%	22.7%	1.7% (0.27)	1.7% (0.22)	35.6%	10.6%	-9.0% (0.26)	-8.2% (0.2)
Honduras	-9.2%	-4.5%	4.2% (0.13)	22.6% (0.16)	-17.7%	-14.2%	-4.7% (0.12)	8.9% (0.15)
Nicaragua	43.2%	112.4%	-42.2% (0)	127.6% (0.73)	29.1%	91.7%	-44.0% (0)	105.8% (0.66)
Panama	22.4%	4.2%	55.7% (0.18)	32.2% (0.09)	10.9%	-5.9%	41.3% (0.17)	19.3% (0.08)
Paraguay	40.7%	54.5%	-21.3% (0.27)	45.8% (0.34)	25.6%	38.7%	-30.8% (0.25)	29.4% (0.29)
Peru	80.6%	70.4%	49.5% (0.34)	63.0% (0.15)	62.4%	53.4%	32.3% (0.31)	46.6% (0.14)
Uruguay	84.2%	48.7%	72.8% (0.17)	9.0% (0.12)	64.1%	32.9%	53.1% (0.15)	-2.8% (0.11)
Latin America (13 countries)	61.8%	25.4%	66.4% (0.08)	47.9% (0.06)	44.8%	12.3%	47.1% (0.07)	32.4% (0.05)

Source: Authors' calculations based on household surveys.
Standard errors in parentheses

Table A3. Unexplained Earnings Gaps after Controlling by the Full set of Observable Characteristics and Job Tenure, by country
**(7 countries with data on job tenure)**

Country	Hourly earnings						Monthly earnings						Yearly earnings					
	Original gap		Full set		+ Tenure		Original gap		Full set		+ Tenure		Original gap		Full set		+ Tenure	
	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07
Bolivia	81.2%	-20.4%	94.5%	33.5%	54.4%	9.5%	194.4%	34.7%	149.4%	46.9%	119.3%	26.3%	163.3%	20.9%	123.2%	32.6%	94.0%	14.2%
			(0.2)	(0.09)	(0.55)	(0.18)			(0.3)	(0.09)	(0.97)	(0.15)			(0.27)	(0.08)	(0.86)	(0.14)
Brazil	112.4%	27.0%	97.2%	37.8%	88.2%	33.8%	187.3%	67.2%	110.3%	43.4%	104.5%	43.5%	156.5%	49.5%	87.4%	28.1%	82.5%	29.3%
			(0.03)	(0.02)	(0.05)	(0.03)			(0.03)	(0.03)	(0.06)	(0.04)			(0.03)	(0.02)	(0.06)	(0.04)
Chile	-0.9%	-17.9%	8.5%	36.3%	10.7%	6.2%	23.7%	20.4%	13.5%	28.7%	24.0%	12.7%	12.1%	8.2%	3.2%	15.9%	13.7%	4.5%
			(0.07)	(0.12)	(0.16)	(0.19)			(0.08)	(0.1)	(0.3)	(0.18)			(0.08)	(0.09)	(0.27)	(0.16)
Costa Rica	112.4%	0.0%	151.8%	57.3%	340.4%	40.9%	189.9%	157.0%	88.0%	85.5%	253.7%	61.0%	161.5%	132.0%	71.0%	67.7%	224.2%	45.8%
			(0.45)	(0.16)	(1.57)	(0.44)			(0.24)	(0.21)	(2.04)	(0.48)			(0.21)	(0.2)	(1.86)	(0.44)
Dom. Rep.	37.5%	0.0%	24.1%	24.6%	29.5%	3.2%	69.9%	31.4%	34.2%	35.4%	47.6%	19.5%	54.0%	18.7%	21.5%	22.2%	34.6%	9.6%
			(0.1)	(0.07)	(0.17)	(0.13)			(0.12)	(0.08)	(0.22)	(0.14)			(0.11)	(0.07)	(0.2)	(0.13)
Ecuador	75.0%	39.7%	2.4%	-3.4%	14.3%	-17.4%	92.7%	62.1%	19.6%	15.2%	51.9%	-6.8%	72.0%	45.5%	6.9%	3.7%	36.3%	-16.6%
			(0.24)	(0.09)	(0.29)	(0.06)			(0.22)	(0.12)	(0.23)	(0.05)			(0.2)	(0.11)	(0.21)	(0.05)
El Salvador	42.9%	25.6%	67.8%	19.0%	70.0%	-12.1%	100.1%	74.6%	74.2%	9.9%	100.9%	11.8%	78.3%	56.0%	54.4%	-2.1%	78.0%	0.4%
			(0.1)	(0.11)	(0.28)	(0.28)			(0.13)	(0.11)	(0.47)	(0.4)			(0.12)	(0.1)	(0.43)	(0.37)
Latin America (7 countries)	104.4%	24.7%	95.8%	37.3%	87.6%	33.0%	177.9%	66.1%	108.6%	43.3%	103.6%	43.0%	148.3%	48.6%	86.0%	28.0%	81.7%	28.9%
			(0.02)	(0.02)	(0.05)	(0.03)			(0.03)	(0.02)	(0.06)	(0.04)			(0.03)	(0.02)	(0.05)	(0.04)

Pre-School and Elementary Teachers vis-à-vis Other Professionals and Technicians

	High School Teachers vis-à-vis Other Professionals and Technicians																	
	Hourly earnings						Monthly earnings						Yearly earnings					
Country	Original gap		Full set		+ Tenure		Original gap		Full set		+ Tenure		Original gap		Full set		+ Tenure	
	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07	C-97	C-07
Bolivia	**35.1%**	**-17.9%**	61.4% (0.24)	17.1% (0.11)	174.0% (0.52)	-27.8% (0.11)	**158.7%**	**45.1%**	91.7% (0.34)	28.4% (0.11)	223.2% (1.33)	-28.4% (0.16)	**131.4%**	**30.3%**	70.1% (0.31)	15.9% (0.11)	195.0% (1.21)	-35.1% (0.16)
Brazil	**23.8%**	**-3.2%**	27.1% (0.07)	16.4% (0.06)	42.6% (0.09)	13.4% (0.07)	**58.3%**	**18.4%**	42.9% (0.09)	21.9% (0.07)	49.0% (0.11)	18.7% (0.09)	**41.3%**	**5.8%**	27.5% (0.08)	9.1% (0.06)	34.9% (0.1)	6.9% (0.08)
Chile	**-22.2%**	**-19.0%**	-2.4% (0.09)	12.0% (0.13)	36.5% (0)	-8.8% (0.25)	**-9.2%**	**-4.5%**	4.2% (0.13)	22.6% (0.16)	66.6% (0)	19.6% (0.2)	**-17.7%**	**-14.2%**	-4.7% (0.12)	8.9% (0.15)	55.0% (0)	11.8% (0.18)
Costa Rica	**28.9%**	**60.9%**	28.2% (0)	51.5% (0.42)	0.0% (0)	-26.0% (0.75)	**43.2%**	**112.4%**	-42.2% (0)	127.6% (0.73)	0.0% (0)	-25.1% (0.77)	**29.1%**	**91.7%**	-44.0% (0)	105.8% (0.66)	0.0% (0)	-35.4% (0.71)
Dom. Rep.	**-0.6%**	**-3.7%**	37.9% (0.13)	21.5% (0.08)	9.0% (0.24)	14.1% (0.19)	**22.4%**	**4.2%**	55.7% (0.18)	32.2% (0.09)	28.6% (0.36)	17.2% (0.23)	**10.9%**	**-5.9%**	41.3% (0.17)	19.3% (0.08)	17.1% (0.33)	7.8% (0.21)
Ecuador	**6.5%**	**10.9%**	-21.1% (0.03)	40.9% (0.23)	0.0% (0)	20.3% (0)	**40.7%**	**54.8%**	-21.3% (0.27)	45.8% (0.34)	0.0% (0)	8.1% (0)	**25.6%**	**38.9%**	-30.8% (0.25)	29.4% (0.29)	0.0% (0)	1.5% (0)
El Salvador	**-0.9%**	**-0.9%**	62.5% (0.13)	12.5% (0.11)	30.9% (0.3)	130.5% (0.47)	**-0.9%**	**-0.9%**	72.8% (0.17)	9.0% (0.12)	6.8% (0.38)	141.7% (0.44)	**-0.9%**	**-0.9%**	53.1% (0.15)	-2.8% (0.11)	-7.0% (0.36)	126.4% (0.4)
Latin America (7 countries)	**25.6%**	**-2.7%**	29.1% (0.06)	16.7% (0.06)	45.6% (0.09)	13.0% (0.07)	**64.3%**	**20.9%**	45.7% (0.08)	22.8% (0.07)	53.2% (0.11)	18.7% (0.09)	**46.7%**	**8.1%**	29.7% (0.07)	9.8% (0.06)	38.2% (0.1)	6.8% (0.08)

Source: Authors' calculations based on household surveys.
Standard errors in parentheses

Figure A1. Confidence Intervals for the Unexplained Earnings Gap by Different Characteristics for Pre-School and Elementary School Teachers versus Other Professionals and Technicians (after controlling by the full set of characteristics)
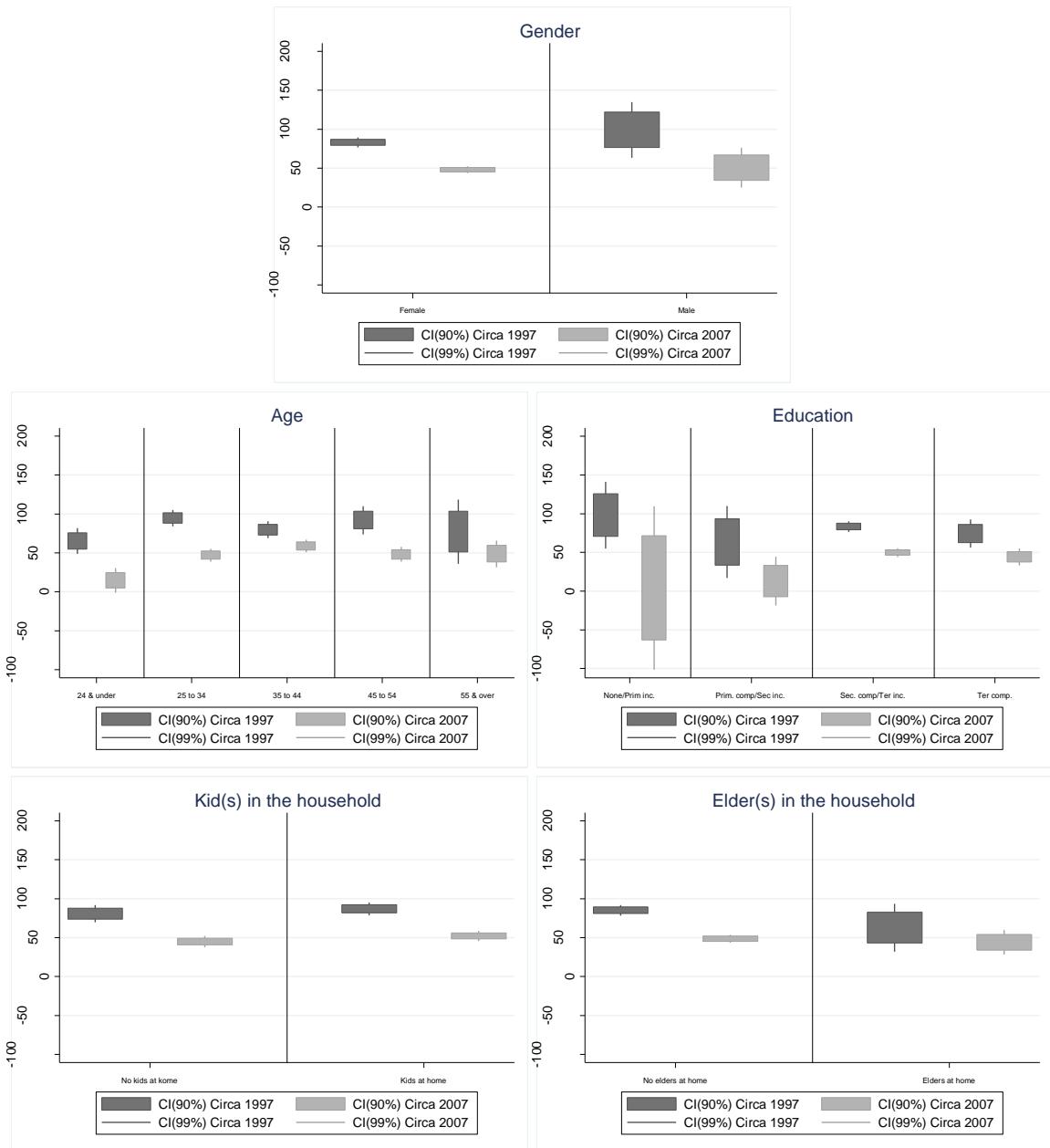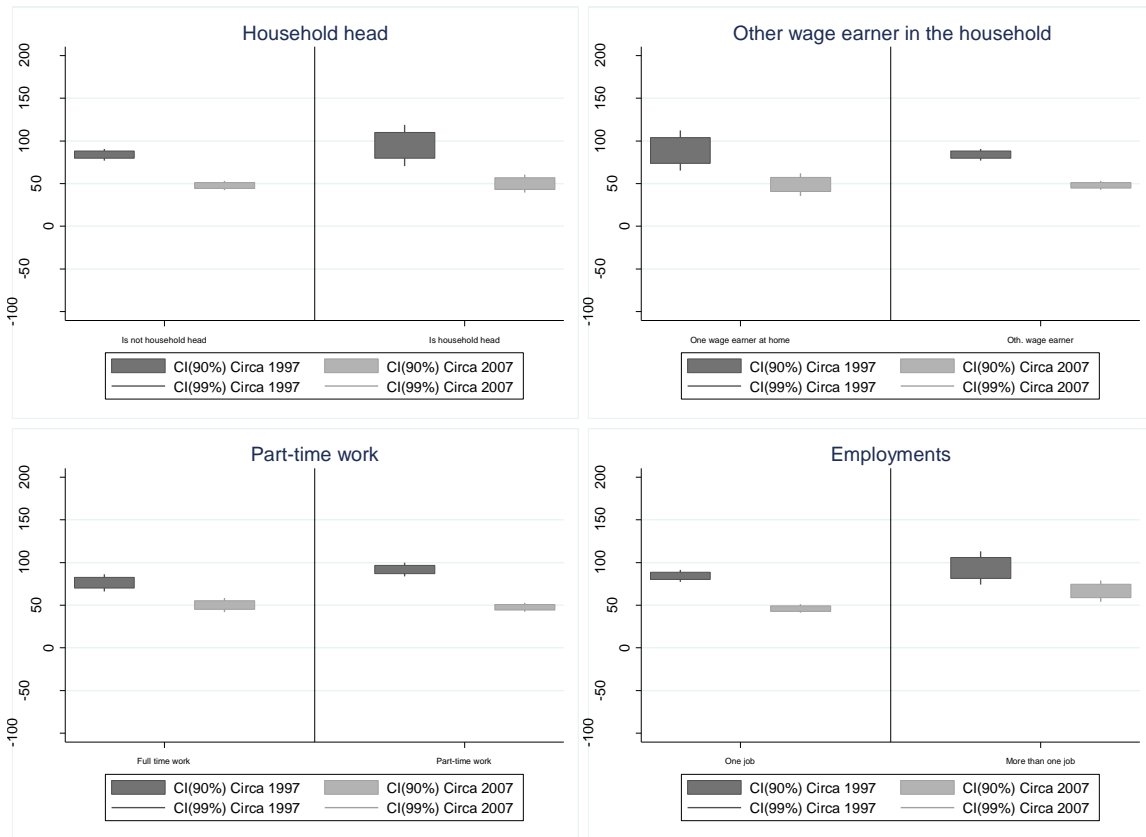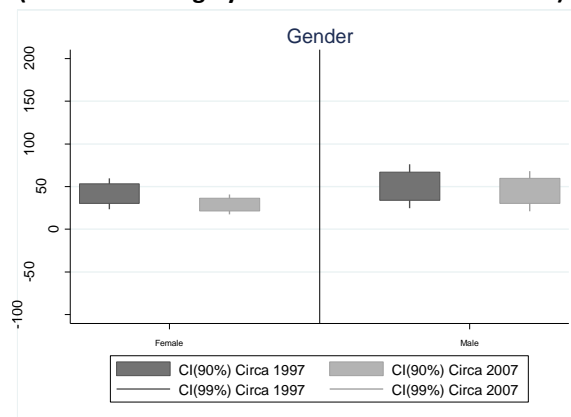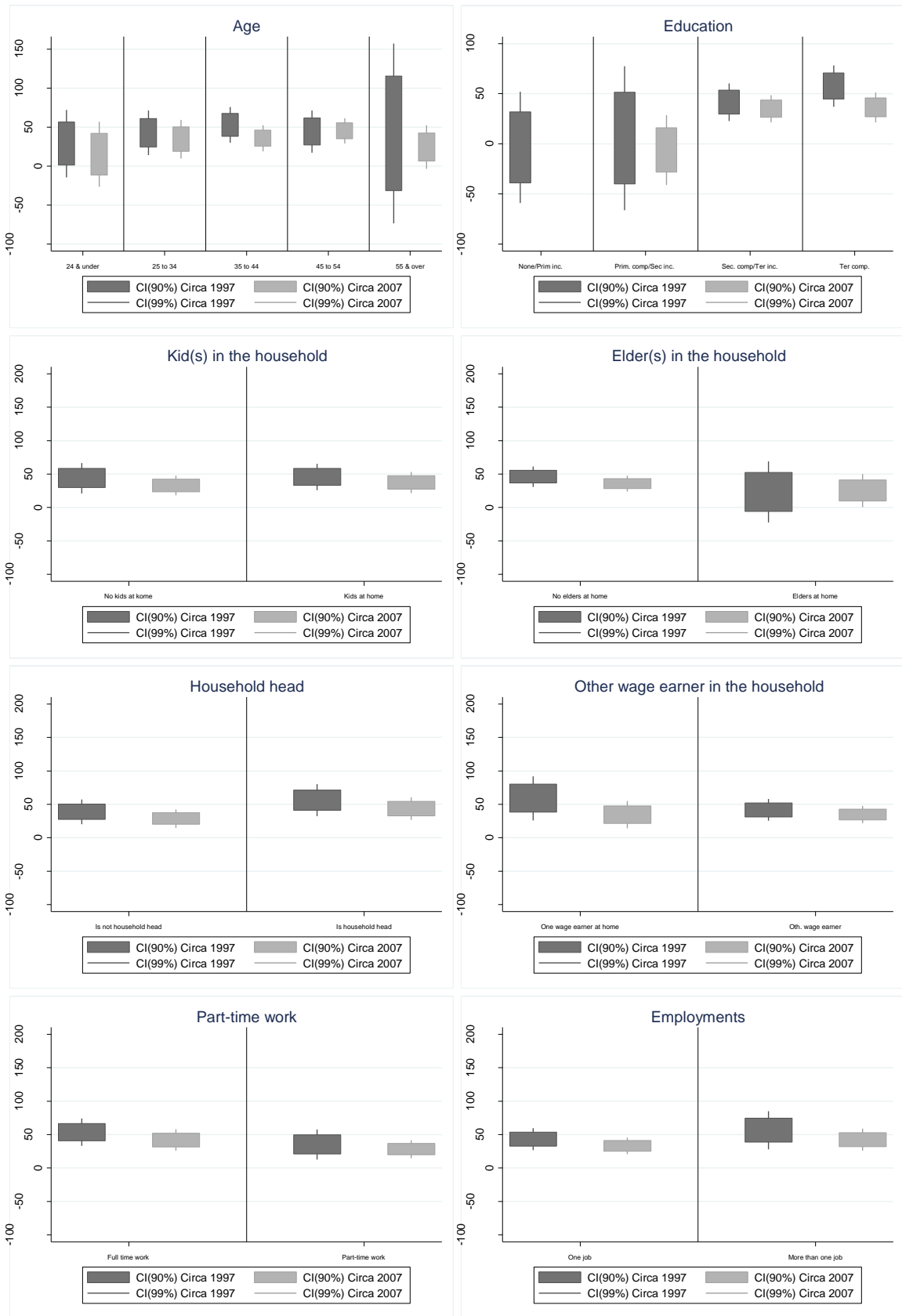
Source: Authors' calculations based on household surveys
Note: Boxes show 90 percent confidence intervals for unexplained earnings; whiskers show 99 percent confidence intervals.

Figure A2. Confidence Intervals for the Unexplained Earnings Gap by Different Characteristics for High School Teachers versus Other Professionals and Technicians (after controlling by the full set of characteristics)

Age

Education

Kid(s) in the household

Elder(s) in the household

Household head

Other wage earner in the household

Part-time work

Employments

Source: Authors' calculations based on household surveys