International Journal of Educational Development 47 (2016) 20–32

Contents lists available at ScienceDirect

International Journal of Educational Development

journal homepage: www.elsevier.com/locate/ijedudev

Measuring the relative pay of school teachers in Latin America 1997–2007

Alejandra Mizala [a,*], Hugo Ñopo [b,1]

[a] Centro de Economía Aplicada, Ingeniería Industrial, Universidad de Chile, República 701, Santiago, Chile
[b] Inter-American Development Bank, Education Division, 1300 New York Ave, NW, Washington, DC 20577, USA

ARTICLE INFO

Article history:
Received 31 December 2014
Received in revised form 20 November 2015
Accepted 30 November 2015
Available online 24 December 2015

JEL classification:
I2
J31
J44
J8
O54

Keywords:
Comparative education
Teachers' labor market
Wage differentials

ABSTRACT

How much are teachers paid in comparison to those in other professions in Latin America? How have these differences evolved in recent years? Is teachers' underpayment more pronounced in certain segments of the labor markets? This paper documents answers for those questions using data for thirteen Latin-American countries circa 1997 and circa 2007. After controlling the earnings differentials by observable characteristics we find that teachers are underpaid vis-à-vis other professionals and technicians in Latin America both, circa 1997 and circa 2007; and both, at their main and secondary jobs. We document a decrease in the earnings gap during the decade of analysis, mostly attributed to a general trend in gap reduction rather than as a result of teachers' improvements on their observable characteristics. The earnings gap shows important heterogeneities, across countries and along the earnings distributions. Additionally, using information from the main and secondary jobs we find that individual penalties for teachers go beyond their observable characteristics.

1. Introduction

Good Teachers are a crucial factor in the success of educational systems. To improve the quality of education it is essential to pay special attention to teachers, by implementing policies to attract, motivate and retain the most talented individuals in the profession. One of the most salient instruments for such policies is, obviously, salaries. As it has been documented, salaries affect teachers' motivation to educate (OECD, 2009; Figlio and Kenny, 2006; Ortega, 2010; Player, 2009; Heutel, 2009; Loeb and Page, 2000); cause good teachers to leave the profession (Imazeki, 2005; Harris and Adams, 2007; Scafidi et al., 2007); and prevent good students from choosing an education major in college (Corcoran, 2007).

In Latin America, teachers' salaries are often perceived to be lower than those of other professionals. The literature, however, has been inconclusive regarding their relative under or over-payment in the labor markets. The available empirical evidence shows that the sign and the magnitude of the conditional wage differential between teachers and other workers hinges on the definition of the comparison group, even when differences in observable characteristics are accounted for.

The aim of this paper is to revisit the question of conditional labor earnings differentials between teachers and other professionals and technicians in Latin America. The extent to which earnings differentials can be attributed to differences in observable socio-demographic and job characteristics is assessed with the non-parametric matching methodology developed in Ñopo (2008). This is an extension of the Blinder–Oaxaca (BO) decomposition (Blinder, 1973; Oaxaca, 1973) for which teachers and non-teachers are matched when showing exactly the same combination of observable characteristics. The method does not require any estimation of earnings equations and, by construction, allows a

* Corresponding author. Tel.: +562 29784034; fax: +562 2978 4011.
E-mail address: amizala@dii.uchile.cl (A. Mizala).

[1] Previous versions of this paper circulated under the title: "Evolution of Teachers' Salaries in Latin America at the turn of the 20th century. How much are they (under or over) paid?" IZA Discussion Papers 5947. Felipe Balcazar, Daniel Alonso and Ivan Bornacelly provided very valuable research assistance. We thank participants at seminars at GRADE, the Economics Department of the University of Chile, the International Congress for School Effectiveness and Improvement, the Chilean Economics Society, and LACEA Annual Meetings for comments and suggestions. Any mistake within the paper is our own and the findings herein do not necessarily represent the views of the Inter-American Development Bank or its Board of Directors. Mizala thanks financial support from PIA-CONICYT Basal Funds for Centers of Excellence Project BF0003 and Fondecyt project 1100308.

http://dx.doi.org/10.1016/j.ijedudev.2015.11.014
0738-0593/

more precise salaries comparison for teachers and their counterparts than the previous literature has provided. Furthermore, this approach allows us to obtain not only more precise estimates of the average wage gap between teachers and non-teachers, but also a comprehensive exploration of its distribution.

We analyze the conditional earnings gaps in thirteen Latin American countries and their evolution between circa 1997 and circa 2007. We find that, although underpaid, teachers' earnings (vis-à-vis those of other professionals and technicians) improved during the decade, especially for the younger individuals, females, part-time workers and those holding only one job.

Moreover, since teachers more frequently report having more than one job compared to other professionals and technicians, we analyze earnings gaps at main and secondary jobs and document teachers' underpayment in both. We find the existence of unobservable individual job-independent traits that make teachers underpaid (within it one may consider cognitive ability, grit, etc.). This issue may in turn call attention to possible selection mechanisms into the teaching profession.

The rest of the paper proceeds as follows. In the next section we briefly discuss the literature, emphasizing the lack of consensus about teachers' relative earnings. In Section 3 we discuss the methodology, introduce the data sources, and explain the approach to harmonize them across countries and some descriptive statistics comparing teachers with other professionals and technicians. In Section 4 we present the main empirical analysis of earnings gaps decompositions, exploring not only the average earnings gaps, but also their distribution along the earnings ladder and analyzing the role of some characteristics of the teaching profession: shorter and more flexible job schedules (with the consequent possibility of holding an extra job and enjoying extra vacation periods), and more job stability (distinguishing it between the private and public sectors). In Section 5 we examine the evolution of the earnings gaps between 1997 and 2007. In Section 6 we conclude.

2. A review of the literature

A series of studies have analyzed teachers' salaries in Latin America examining whether they are under or over-paid[1]. Most of them use National Household Surveys to estimate Mincer wage equations with different control variables, and some use the Blinder–Oaxaca decompositions. The results are mixed. There is no robust empirical evidence showing that teachers receive lower or higher salaries than a comparable group of workers.

Psacharopoulos et al. (1996) use data for 12 Latin American countries to compare average wages without finding a clear pattern; in some countries teachers' pay is higher than the comparative group and vice versa. Liang (1999) finds that in 11 out of 12 countries analyzed, hourly wages for teachers are actually higher than their counterparts' in the labor force with similar observable characteristics. Hernani-Limarino (2005) examines the robustness of conditional wage differentials to the methods used and the definition of the comparable group for 17 Latin American countries. He concludes that in some countries (i.e. Chile) teachers earn more than the comparable workers. In some they receive lower salaries (i.e. Nicaragua), while in others the answer depends on the control group and the method used to estimate the wage gap. He also shows an increase in the unconditional earnings differentials in favor of teachers when these are compared with workers who have lower productive endowments. Estimating conditional wage differentials for different quantiles of the conditional wage distribution, he concludes that teachers are over or under-paid depending on their position in such conditional distribution.

This Latin American empirical evidence shows that the sign and magnitude of the conditional earnings differential between teachers and other workers crucially depend on the definition of the comparison group. In that regard, it is important to highlight that our comparison group differs from those reported in the previous literature. We compare teachers to other professionals and technicians, aiming at comparing workers with similar or comparable skills. Table 1 contrasts our results with those of the three pieces of the literature that analyze the Latin American region (Psacharopoulos et al., 1996; Liang, 1999; Hernani-Limarino, 2005), using their own definitions of teachers and comparison groups but computing all statistics (hourly earnings and wage gaps) with our data. As it can be noted, the previous literature included Legislators, Managers, Armed forces and, especially, Office workers as part of the comparison groups. The result of including all these workers in the comparison group has underestimated the magnitude of the earnings gaps. This is already an important departure point for this paper from the available literature.

In terms of country studies, Saavedra (2004) finds that for Peru earnings comparisons between teachers and other occupations depend on geographical differences. In Lima teachers earn less than comparable workers, while in the rest of the country they enjoy a wage premium. Mizala and Romaguera (2005) find that for Chile, once differences in observed characteristics are accounted for, teachers' salaries are similar to those they would receive in other occupations; however, they find relevant differences between men and women. Female teachers earn more than their counterparts, while male teachers earn less than similar workers in other sectors of the labor market. Vegas et al. (1998) find that over one-third of teachers earn incomes that are lower than they would earn in other occupations; however, teachers' comparative earnings vary greatly across cities. In Bolivia, Colombia, Guatemala and Mexico, the evidence points toward a teachers' wage premium, explained by the fact that they are public workers, i.e., teachers working in the public sector earn higher salaries than comparable private sector teachers and similar workers in other occupations (Piras and Savedoff, 1998; Gaviria and Umaña, 2002; Rivas and Lavarreda, 2008; López-Acevedo and Salinas, 2004). Furthermore, Herrero et al. (2003) for Argentina; and Urquiola et al. (2000) and Urquiola and Vegas (2005) for Bolivia, show that whether teachers are well paid depends on the comparison group, even when differences in observable characteristics are accounted for. Conditional wage differentials favor teachers when compared with all workers; nevertheless, the differentials disfavor teachers when compared with workers who had completed at least secondary education.

In sum, 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 empirical strategy used (the comparison group and the econometric method). The methods applied have evolved over time; most of the earlier papers estimate earnings equations by OLS. More recently, new methods intending to correct for selection bias -due to the non-random allocation of individuals between professions/occupations- were implemented.

In addition, at least two issues should be taken into account when estimating wage gaps. First, it has been argued that onlyestimating the average wage gap is a drawback, given the heterogeneous behavior of wage differentials. In fact, there is some evidence of intra-country heterogeneity, for instance, regarding

[1] There are also several studies addressing this issue for non-Latin American countries, for instance, Taylor (2008), Podgursky and Tongrut (2006), Harris and Adams (2007), 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.