Teacher Wages in the South African Labour Market: How Attractive is the Teaching Profession?

"Attracting qualified individuals into the teaching profession, retaining those qualified teachers, providing them with the necessary skills and knowledge, and motivating them to work hard and to do the best job they can is arguably *the* key education challenge" (Vegas and Umansky, 2005).

How attractive is the teaching profession? How likely are the most productive and best educated members of the labour to enter the teaching profession? This brief investigation attempts to clarify the situation with regards to the adequacy of teacher pay. It takes a look at the earnings of teachers in comparison to those of their nonteaching counterparts in the South African labour force, investigating whether the profession is considered attractive from a labour market perspective.

In 1993, Edupol reported that teacher salaries had increased by 124% between 1988 and 1992, although this increase was certainly not uniform across race and age groups (Edupol, 1993). Government policy regarding teacher pay resulted in different demographic groups experiencing differences regarding salaries, with white male teachers faring worst and black female teachers experiencing the biggest increases (Hosking, 2000).

Disparities along the lines of race and gender were also eliminated by government policy between 1983 and 1997. 1986 saw the equalization of salary scales between black and white teachers, with gender differences being eliminated in 1992 (Edupol, 1993). The overall objective of government policy was to bring salary *scales* for the entire teaching force in line with those of white male teachers. Average salaries were therefore not equal across race and gender groups (although they were still closer together) and in 1992, the mean salary for black female teachers was approximately half of what it was for white male teachers (who constituted 7.3% of all teachers in 1992); (Edupol, 1993). Given the equalization of salary scales therefore, the higher average salary for the latter group suggests that this group contained a greater proportion of teachers with more years of teaching experience and with more qualifications (Hosking, 2000).

A further characteristic of teacher salaries in the 1990s was trade union pressure for the compression of teacher salaries (i.e. the curtailment of salary increases at the upper end of the scale and higher increases in the salaries at the lower end of the salary scale). Indeed, the Education Labour Relations Council called for salary increases of 5% for teachers in the highest posts, while for teachers at the lowest level of the education system were to receive increases of close to 29% (Bot, 1996). Similarly, SADTU proposed salary increases of around 11% or 12% for teachers at the lowest levels of the scale, and no increase at all for teachers at the top of the salary scale (Hosking, 2000). The intention of such adjustments was to discourage the acquisition of additional qualifications and promotions in order to increase remuneration. It is argued that this type of remuneration results in a "paper chase" with teachers acquiring often irrelevant qualifications (in terms of the education system and the school environment) in order to receive higher pay (Edupol, 1993).

The post-apartheid equalization of teacher pay therefore resulted in a substantial increase in teacher salaries. In fact, black teachers who had attained four years of post-secondary education experienced real pay increases in the region of 25% in the mid-1990s (Gustafsson and Patel, 2008). South Africa therefore experienced an abrupt increase in the unit cost of teachers post-1994, creating considerable constraints for the public education system. In particular, it became considerably more challenging to maintain pupil-teacher ratios (Gustafsson and Patel, 2008). 5

Salary spending per educator increased by a little more than the minimum pay notch between 1998 and 2006, indicating first of all that the public teacher workforce is becoming older, and secondly that a higher proportion of educators are moving into management positions – "management drift" – such as Head of Department (Gustafsson and Patel, 2008). Importantly, the ratio of mean teacher pay to GDP has been declining since 1997 (see figure 1 below) – a predictable trend in a country's development trajectory and one that will render improvements like a lowering of the pupil teacher ratio a possibility in the long term (Gustafsson and Patel, 2008).

This paper investigates data from recent years. It aims specifically to compare the wages of teachers to the wages of those employed in professions whose demographic characteristics are similar to those of teachers, therefore enabling us to consider how teachers compare to a groups of workers to whom they may compare themselves on the basis of the similar characteristics within these grous.

It must be pointed out that the analysis conducted below uses Labour Force Survey (LFS) data for the years 2000 to 2007. This is not an oversight, but rather the result of the lack of usable data post-2007. Quarterly Labour Force Surveys have been conducted since 2008, but earnings information was excluded from the survey until the third quarter of 2010. However, Statistics South Africa has stated that the earnings information the QLFS 2010 is inaccurate and therefore not usable. This is a most undesirable situation for analysts since the LFS and the QLFS are the only surveys in which teachers can be identified and compared to other members of the labour force. Our access to information regarding the relative labour market standing of teachers therefore ends at 2007. Analysis of teacher pay using Persal data indicates that substantial shifts occurred in teacher pay between 2008 and 2010, yet the lack of available data renders it impossible to investigate the impact of these shifts on the attractiveness of the teaching.

In order to gauge whether or not teachers are paid badly in comparison to other groups of professionals in the labour market, it is useful to get an idea of which demographic groups (defined according to race, gender and age) contain the most teachers as a proportion of the whole group. Table 1 presents teachers as a proportion of race groups for the years 2000 to 2007.

TABLE 1: Proportion of Teachers across Demographic Groups

RACE AND	AGE	YEAR

GENDER	GROUP									
		2000-2007	2000	2001	2002	2003	2004	2005	2006	2007
Black male	less than 20	1%	1%	1%	1%	1%	1%	1%	1%	1%
	20 to 29	4%	4%	3%	3%	5%	4%	5%	4%	3%
	30 to 39	4%	2%	3%	3%	4%	4%	5%	5%	4%
	40 to 49	2%	1%	2%	2%	3%	2%	2%	3%	4%
	50 plus	1%	1%	0%	0%	0%	1%	1%	0%	0%
Black female	less than 20	3%	5%	4%	2%	5%	4%	2%	2%	1%
	20 to 29	13%	11%	12%	14%	16%	16%	16%	13%	11%
	30 to 39	16%	14%	12%	15%	17%	18%	17%	17%	19%
	40 to 49	13%	11%	10%	12%	14%	13%	14%	15%	15%
	50 plus	9%	6%	13%	9%	5%	6%	9%	8%	12%
Coloured Male	less than 20	1%	1%	1%	0%	0%	1%	1%	1%	0%
	20 to 29	3%	3%	3%	3%	3%	2%	2%	3%	2%
	30 to 39	2%	2%	1%	1%	2%	3%	2%	3%	3%
	40 to 49	2%	1%	0%	1%	0%	1%	4%	3%	6%
	50 plus	2%	2%	0%	0%	8%	9%	0%	0%	0%
Coloured female	less than 20	1%	1%	1%	1%	1%	1%	1%	2%	1%
	20 to 29	5%	4%	5%	4%	6%	6%	7%	5%	5%
	30 to 39	8%	4%	6%	6%	7%	7%	10%	9%	9%
	40 to 49	8%	1%	4%	7%	9%	3%	7%	10%	17%
	50 plus	5%	0%	9%	0%	0%	21%	0%	3%	1%
Indian male	less than 20	1%	0%	2%	1%	2%	2%	0%	0%	2%
	20 to 29	3%	1%	2%	2%	6%	7%	1%	1%	3%
	30 to 39	3%	3%	4%	5%	7%	3%	2%	2%	3%
	40 to 49	4%	4%	5%	1%	7%	8%	3%	1%	6%
	50 plus	1%	0%	0%	6%	0%	0%	0%	0%	0%
Indian female	less than 20	3%	2%	3%	1%	4%	4%	4%	2%	6%
	20 to 29	8%	10%	9%	8%	12%	8%	7%	5%	5%
	30 to 39	10%	18%	6%	6%	10%	11%	8%	8%	12%
	40 to 49	5%	0%	0%	0%	6%	16%	5%	4%	6%
	50 plus	6%	0%	0%	0%	0%	0%	0%	22%	0%
White male	less than 20	1%	3%	1%	0%	1%	1%	2%	3%	1%
	20 to 29	2%	2%	2%	1%	2%	3%	3%	3%	1%
	30 to 39	2%	1%	2%	2%	4%	3%	6%	1%	2%
	40 to 49	3%	1%	3%	4%	5%	3%	3%	2%	1%
	50 plus	3%	1%	0%	3%	6%	7%	0%	6%	1%
White female	less than 20	5%	3%	1%	3%	5%	3%	6%	5%	12%
	20 to 29	8%	8%	7%	6%	8%	9%	10%	6%	12%
	30 to 39	13%	12%	13%	12%	12%	13%	10%	12%	21%
	40 to 49	11%	6%	7%	8%	13%	11%	13%	11%	15%
	50 plus	7%	4%	13%	8%	5%	12%	6%	5%	7%

Source: Own calculations from the Labour Force Survey (LFS) 2000 – 2007 (March and September), Statistics South Africa.

The table indicates that black females between the ages of 20 and 29 and white females between the ages of 30 and 49 are the groups containing the highest proportion of teachers. It may therefore prove useful to compare the wages of teachers with the wages of individuals

falling within these groups in order to get an idea of whether teacher wages are attractive to non-teacher workers in the groups from which most teachers are drawn.

Table 2 presents the occupations in the largest proportion of the comparison groups mentioned above are found. Although members of these groups have other occupations besides those mentioned in the table, these occupations in which the largest groups of non-teachers fall. Furthermore, the individuals in table 2 are people with at least 12 years of education. This is done to ensure that the occupations to which teachers are being compared are comparable to teaching. The average years of educational attainment amongst teachers captured in the Labour Force Survey (LFS), from which this analysis is conducted is 13 years.

TABLE 2: Non-teaching Occupations

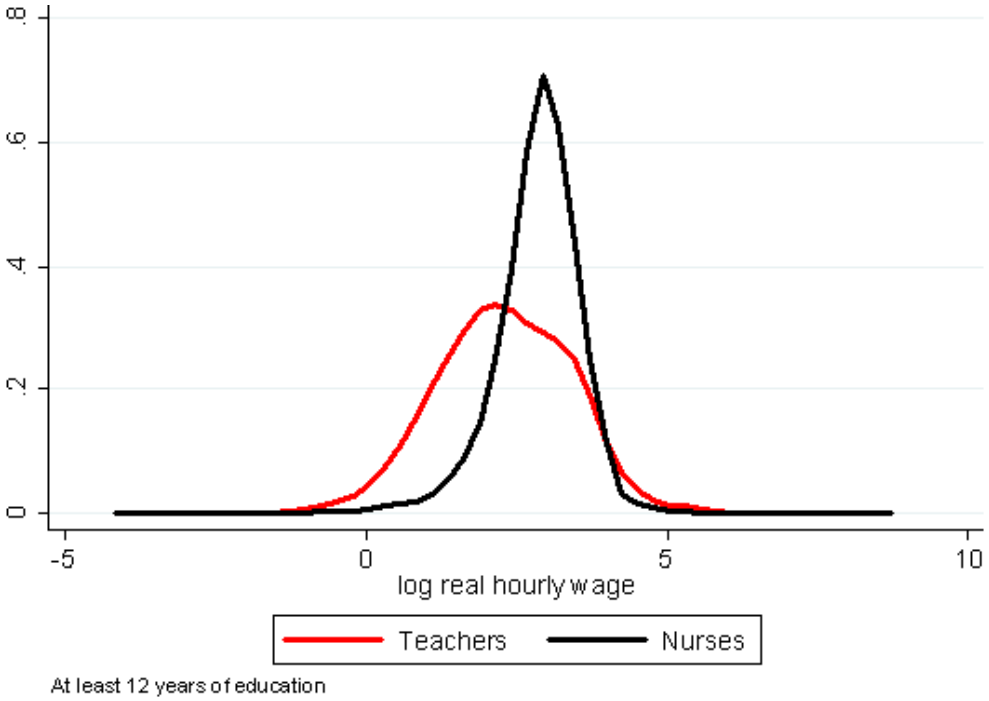
DEMOGRAPHIC GROUP	OCCUPATION	PERCENTAGE OF DEMOGRAPHIC GROUP
Black females aged 20 to 49	Nurses	20
White females aged 30 to 49	Clerks	15
	Secretaries	8
	Nurses	7

Source: Own calculations from LFS 2000 – 2007 (March and September), Statistics South Africa

Table 2 indicates that a significant number of non-teachers workers in the groups to which teachers are being compared are nurses. This is important because a large proportion of nurses are employed in the public sector, like teachers. They therefore form an important reference group against which to measure the wages of teachers in South Africa.

A comparison of the wage distributions of teachers and nurses amongst black females between the ages of 20 and 49 is presented in figure 1 below.

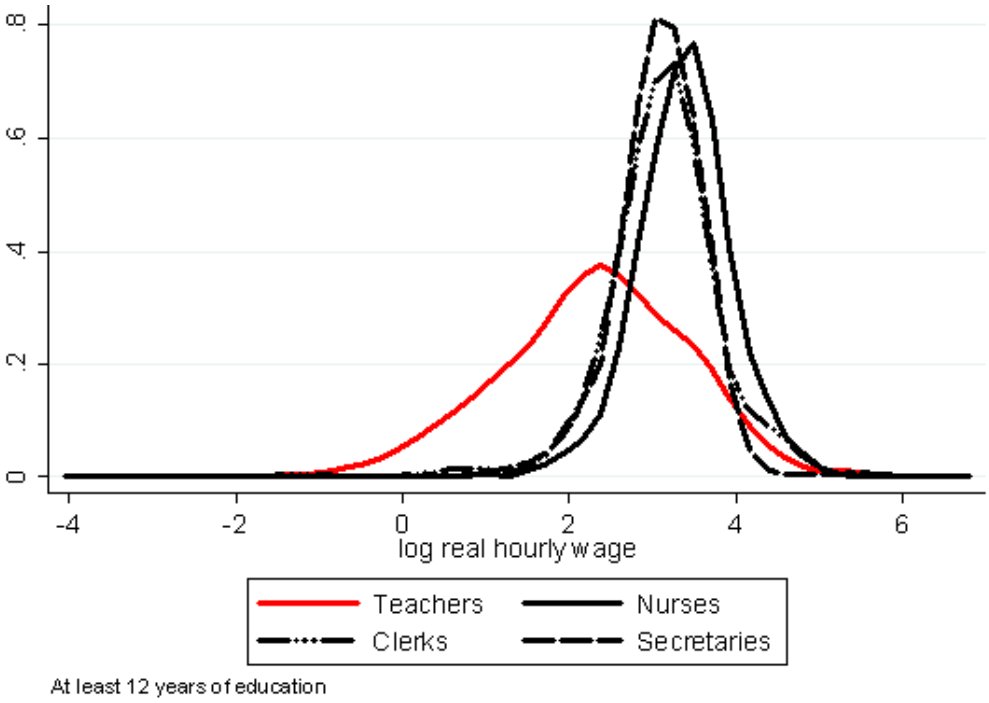
FIGURE 1: Wage distribution of black females aged 20 to 49 (2000 – 2007)



The y-axis in the figure above indicates the density or "proportion" of members of each groups (so in this case, nurses and teachers) that earn particular wages. These wages are indicated along the x-axis. Wages at the upper end of the income distribution take very large values – often larger than can be sensibly represented graphically. For example, is the lowest earning teacher in the education system earns R5 per hour, the second lowest-earning teacher earns R7 per hour, and the highest-earning teacher earns R120 per hour , it is clear that any actual values for wages will not be easily represented on the x-axis of a graph. Furthermore, in any income distribution, there are generally more low income earners than there are high income earners, resulting in an uneven distribution of people across the range of the income distribution. In order to look at a distribution of wages in such a way that we do not have a "bunching" of earners at the lower end of the distribution (i.e. larger numbers of low income earners), we use a log scale to "stretch" the distribution out. This way, we do not change the order of earners – those earning the highest wages still remain at the top end of the distribution and the lowest earners still remain at the lower end of the distribution. In terms of practically understanding the graph above, a log real hourly wage of 5 is equivalent to an hourly wage of R148.40, approximately. A log real hourly wage of 3 is equal to an hourly wage of R20.09 approximately.

The figure shows that the distribution of wages of nurses lies to the right of the distribution of wages of teachers. This means that within this demographic group, nurses received higher wages than teachers. Wage distributions are drawn for white females between the ages of 30 and 49 in figure 2. Prominent non-teaching occupations in this group are nursing, secretarial work and clerking.

FIGURE 2: Wage distribution of white females aged 30 to 49 (2000 – 2007)



From the figure it is seen that similar to their black counterparts, the distribution of wages for white teachers between the ages of 30 and 49 lies to the left of non-teaching occupations,

indicating that the wages of teachers in this demographic group are lower than those of their non-teaching counterparts.

It therefore seems plausible to state that within the demographic groups containing the highest proportion of teachers, teachers appear to earn less than individuals employed in non-teaching occupations. Indeed, individuals in the labour market differ substantially from each other and there are many factors (such as their gender, union membership status, province of employment etc) that may explain why individuals – perhaps even those employed within the same profession - earn different wages. Although the question of what impacts on wage levels is an important one, particularly in the case of South Africa, for the purpose of this analysis, we are interested only in the impact that an individual's level of education and labour market experience has on their earnings. In order to isolate this effect, we need to control for the impact that other characteristics of the individual have on their wage. We are able to do this to some extent using ordinary least squares (OLS) regression.

OLS enables us to investigate whether or not it is attractive for educated individuals with various levels of experience to join the teaching force. In order to do this, we make use of Mincerian wage functions. Mincerian wage functions use OLS regression to investigate the impact of an additional year of education and experience on earnings, while controlling for individual characteristics of workers. In other words, they enable us to look at the impact of education and years of experience on an individual's wage separately from the impact that other factors may have on their earnings. The Mincerian wage functions take the form

$$\log Wage = \beta_0 + \beta_1 Education + \beta_2 Potential\ Experience + \beta_3 Potential\ Experience^2 + \delta X + e$$

in which β_1, β_2 and β_3 indicate the impact that education, experience and its squared term have on hourly wages. X is a vector of worker characteristics, and δ is a vector of the impact that these characteristics have on hourly wages. The log of wages is used in order to obtain the impact that education and experience have on the *change* in wages. So for example, a teacher with 16 years of education (matric plus 4 years of tertiary education) will earn an hourly wage that is 6.8% higher than a teacher with 15 years of education (matric plus 3 years of tertiary education). 6.8% is obtained by calculating $((e^{0.066}) -1) \times 100$.

The regression was run for black female teachers and nurses aged 20 to 49 and for white female teachers and nurses aged 30 to 49 (results are presented in the *Teachers* and *Nurses* columns), and for white female secretaries and clerks aged 30 to 49 (results are presented in the *Secretaries* and *Clerks* columns) The results are presented in table 2 contains the descriptive statistics for the groups included in the regression.

TABLE 2: Descriptive Statistics

Variable	Sub-Sample			
	Teachers	**Nurses**	**Secretaries**	**Clerks**
Education	12.342 (1.48)	10.857 (2,83)	11.946 (0.99)	12.420 (1.72)
Experience	7.334 (3.69)	13.492 (6.09)	17.405 (3.02)	24.752 (4.83)
Married	0.503 (0.50)	0.319 (0.47_	0.757 (0.43)	0.819 (0.39)

Union	0.251 (0.43)	0.316 (0.47)	0.135 (0.35)	0.349 (0.48)
Tenure	3.218 (3.29)	3.495 (4.10)	6.486 (5.45)	10.462 (8.45)

Standard errors are presented in parentheses below the mean values.

Table 2 indicates that teacher have higher levels of educational attainment than all comparator groups with the exception of clerks. It is difficult to interpret the descriptive statistics on the remainder of the explanatory variables since they are limited to certain demographic and groups. What is important to notice from table 2i s the fact that on average, teachers are better educated than their counterparts in the nursing and secretarial professions.

Regression estimates are reported in table 3 below.

TABLE 3: Regression estimates for augmented Mincerian wage function on log hourly wages (2000 - 2007)

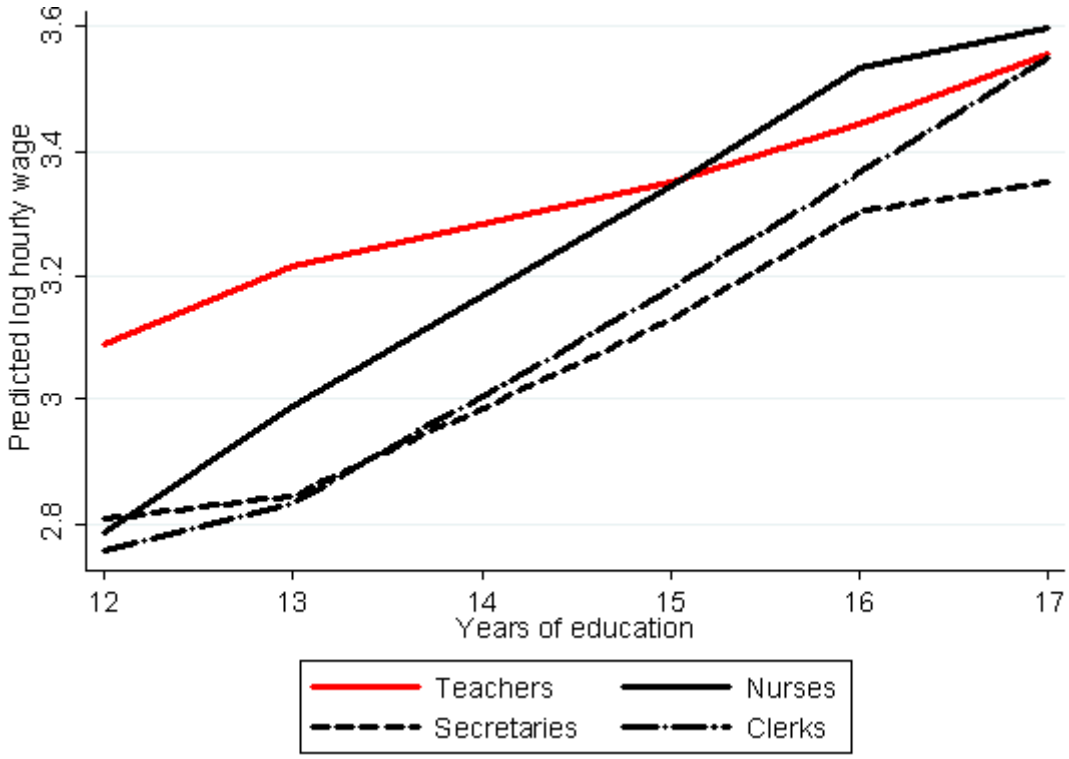
Variable	**Sub-Sample**			
	Teachers	**Nurses**	**Secretaries**	**Clerks**
Education	0.066*** (12.17)	0.132*** (6.96)	0.053* (1.90)	0.118*** (4.29)
Experience	0.010* (1.78)	0.047*** (3.81)	0.040 (0.88)	-0.121** (-2.35)
Experience^2	-0.001** (-2.52)	0.001*** (-3.56)	-0.001 (-0.88)	0.002** (2.28)
Married	-0.015 (-1.07	0.029 (1.01)	-0.106 (-1.80)	-0.266*** (-4.37)
Union	0.255*** (13.28)	0.252*** (7.74)	0.108 (1.60)	0.038 (0.60)
Tenure	0.006*** (5.96)	0.006*** (3.18)	0.006 (1.83)	0.012*** (3.44)
Constant	2.279*** (4.21)	-0.187 -0.57)	1.716 (1.96)**	3.362*** (3.67)
Adjusted R-Squared	0.078	0.1652	0.1358	0.1783
No. Of Observations	7251	1989	433	568

Source: Own calculations from LFS (March and September) 2000 – 2007, Stats SA. Race, province and industry are controlled for in these regressions.

Important to note is that the Mincerian wage functions are run for hourly wages. Hourly wages are used so that we control for the fact that teachers work fewer weeks during the year than do other workers because they do not work during school holidays. By comparing hourly wages, we are able to compare wages for the same unit of work across all the professions. If monthly wages were compared, teachers may appear to be doing worse in comparison to other professions than they actually do, since we would understand their wages to cover more weeks of work in the year than they actually do. It is therefore more accurate to compare hourly wages across professions.

These results are depicted graphically in figure 3 and 4 for education and experience, respectively

FIGURE 3: Returns to Education (2007)



. Important to bear in mind is that this regression was run only for specific groups within the populations, as mentioned above the results presented in table 3. The situation depicted above is therefore only applicable and relevant for the specific groups outlined previously.

Figure 3 indicates that although up until 15 years of education, the returns to education for teachers are higher than for other occupations in the comparison groups. The y-axis on figure 3 indicates that these lines represent "predicted" hourly wages. This means that the values produced by Mincerian wage function for each groups (i.e. the values produced in table 3 for the education variable) are multiplied by 12, 13, 14, 15 16 and 17 years of education and the values are plotted as in figure 3 above. The predicted log hourly wages is therefore what the Mincerian wage function predicts each of these occupations will earn at each level of educational attainment, controlling for all the other variables included in the model. At higher levels of education, we see that returns to education for teachers fall below those of nursesThis suggests that at higher levels of education, or at levels of education where teachers may be considered to become specialists in their field (postgraduate education), the returns to education fall below those of nurses. They also appear to converge with returns to education for secretaries, indicating that the returns to education for secretaries with high levels of educational attainment are higher than they are for teachers with the same level of educational attainment. This appears to be the case for both secretaries and nurses, since the slopes of the lines indicating the returns to education are steeper for both these groups than they are for teachers. The same is true for clerks up until 16 years of education.

FIGURE 4: Returns to Experience (2007)

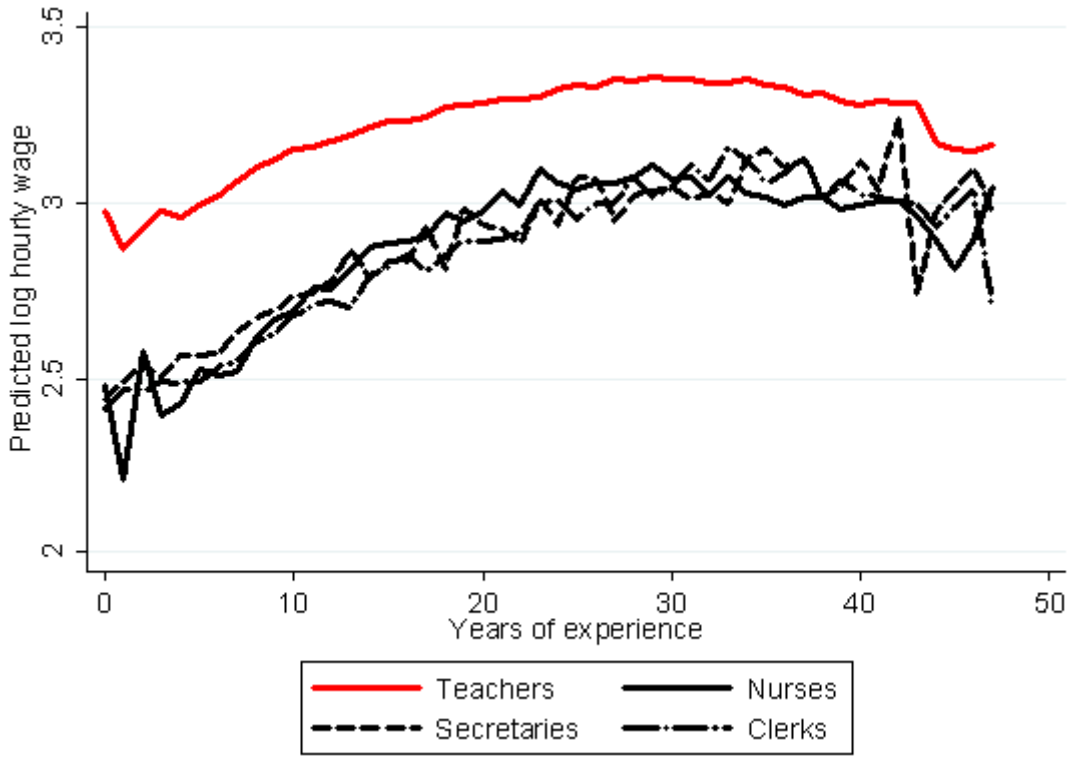
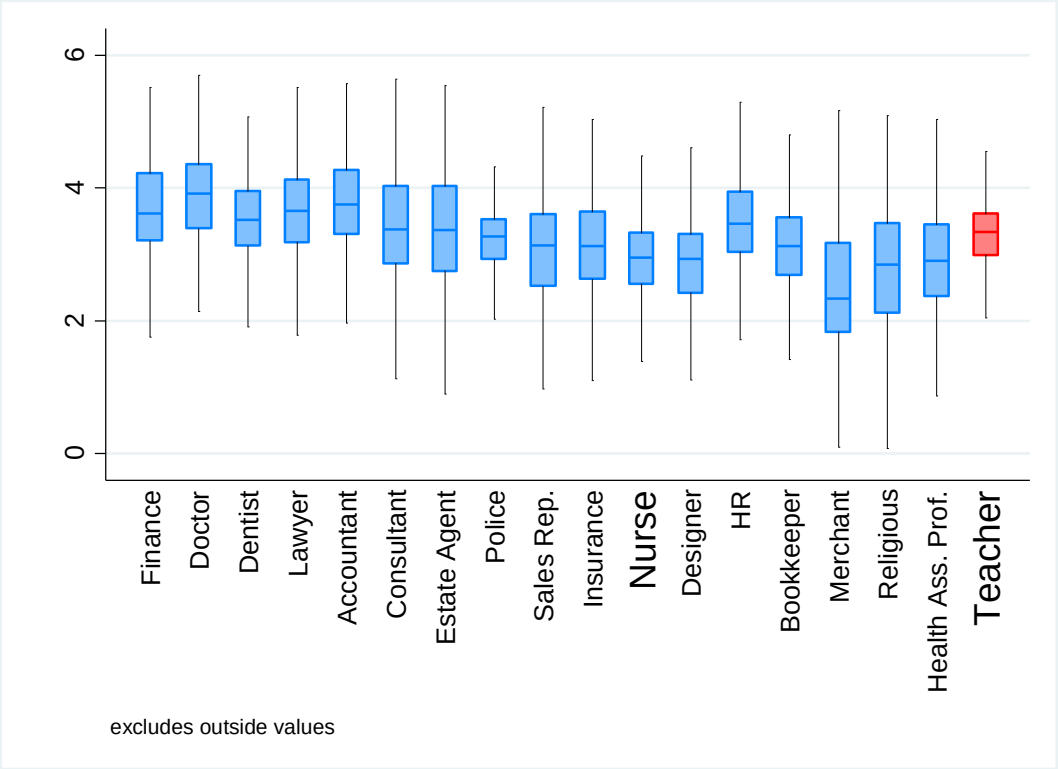


Figure 4 indicates that in terms of returns to experience, all 4 groups appear to experience a roughly similar age-wage profile. Although teacher wages are higher than those of their non-teaching counterparts at all levels of experience, the fact that the returns to experience flatten out after roughly 20 years of teaching experience strongly suggests that the appeal of the teaching profession in terms of rewards for long service is minimal. Figure 4 represents only returns to experience, controlling for other factors reported in table 3 above. Therefore, although the returns to experience for teachers are higher than for nurses, secretaries and clerks at all levels of experience, this does not imply that overall wages are higher for teachers. As figures 1 and 2 demonstrated, the proportion of teachers earning higher wages is below that of other professions. Figure 4 simply shows that the reward for a given level of experience and after controlling for other factors affecting hourly wages, the hourly wage of teachers is higher than it is for the other professions for which the Mincerian wage functions were run. Other factors (some of which are controlled for in the Mincerian wage functions) cause the proportion of nurses, secretaries and clerk at the upper end of the wage distribution to be larger than the proportion of teachers.

It is useful to understand how teacher wages look relative to the wages of occupations which, given the demographic characteristics of teachers, we may expect to be considered the most likely alternative occupations amongst teachers. It is also important to understand how teachers compare to the labour force as a whole. Teachers are identified in the LFS data by using detailed occupation codes. An individual is defined as a teacher if the detailed occupation code indicates that the individual is a *primary education teaching associate professional*, a *teaching associate professional not elsewhere classified*, a *secondary education teaching professional*, or a *primary education teaching professional.*

Figure 5 presents a comparison of teachers' wages to those of various professions[1] in the labour market. It makes use of boxplots – a tool that indicates what the distribution of wages look like. Profession for which boxplots have long "whiskers" are professions in which a wide range of wages are found (i.e. people in this profession experience very high and very low wages). Professions for which the whiskers of the boxplots are short are professions in which the range of wages is narrow. Important to box in the middle of the box plot – this indicates where the middle of the distribution lie. This is the most useful measure to use for comparison as it excludes individuals who one may think of as earning slightly above or below average wages in comparison to others employed in that occupation.

FIGURE5: Boxplots of log real hourly wage (2007)



Source: Own calculations from LFS (March and September) 2000 – 2007, Stats SA

Interesting to observe is that the range of real hourly wages for teachers is largely comparable to what may be thought of as "lower order" professions. In comparison to professions that are considered "prestigious" in the South African context (and largely internationally, too), teachers' hourly wage rate is slightly lower. We also see that the range of hourly wages for teachers is smaller than for all other professions, with the exception of members of the police force. This may well have to do with the extent of unionisation in the teaching force, but even so highlights the absence of large wage returns in the teaching profession. Again with the exception of individuals employed in the police force and potentially designers, teachers

[1]This is not a complete list of professions in the labour market.

being paid the greatest wage on an hourly basis (excluding outliers) still receive hourly wages below that of all other professions included in the figure.

The issue of hours worked is an important one when investigating the attractiveness of teacher pay relative to that received by other professionals. Because teachers tend to work less hours than do non-teachers, a comparison of monthly earnings is less favourable to teachers than would be the case if hourly earnings were compared. Hernani-Limarino (2005) reports that most non-teacher workers across a broad cross-section of Latin American countries work more hours per week than do teachers. Teachers may therefore appear to earn less than non-teacher workers if wages are compared without taking this into account. However, controlling for the amount of work done by investigating hourly wages enables us to compare wages in the a more accurate unit.

Figure 5 is useful because it provides an overview of how teachers compare to other professions in the labour market. However, it provides a fairly "static" picture of what is going on in the labour market. We are unable to explain why teacher wages are lower than those of prestigious professions. As explained earlier, OLS regression used in Mincerian wage functions enables us to look at the impact that education and labour market experience have on wages for teachers and non-teachers. It enables us to understand the characteristics of teacher remuneration that result in teachers earning less than their non-teaching counterparts.

The Mincerian wage function was run for teachers, for non-teachers and for non-teachers with at least 10 years of education. Non-teacher workers with at least 10 years of education are used as a separate group of workers because in comparing teacher wages to those of non-teachers in the South African labour market, it is important that we do so for a "comparable" group of non-teacher workers and a group that is obviously not comparable. Comparing teachers to all workers in the South African labour market will result in teacher wages appearing to be substantially higher than those of non-teacher workers. However, comparing the wage of a teacher with 13 years of education to that of a factory worker with primary education is not very useful in terms of explaining whether or not the teaching profession is attractive to highly educated workers.

The results for the Mincerian wage functions are presented in table 4 below.

TABLE 4: Regression estimates for augmented Mincerian wage function on log hourly wages (2007)

Variable	Sub-Sample		
	Teachers	**Non-teachers (all levels of education)**	**Non-teachers (at least 12 years of education)**
Education	0.074	0.111	0.254
	(20.11)***	(187.39)***	(165.36)***
Experience	0.018	0.014	0.029
	(6.74)***	(28.17)***	(35.89)***
Experience^2	0.000	0.000	0.000
	(-5.92)***	(-7.09)***	(-23.64)***
Female	-0.066	-0.162	-0.152
	(-5.67)***	(-48.57)***	-35.46)***
Married	0.008	0.144	0.141
	(0.67)	(42.75)***	(30.55)***

Union	0.259	0.276	0.227
	(18.06)***	(76.11)***	(48.52)***
Tenure	0.007	0.016	0.018
	(8.33)***	(68.53)***	(49.27)***
Constant	0.767	-0.039	-1.817
	(3.22)***	(-4.04)***	-78.74)***
Adjusted R-Squared	0.1106	0.5421	0.4929
No. Of Observations	12142	252697	139040

Source: Own calculations from LFS (March and September) 2000 – 2007, Stats SA. Race, province and industry are controlled for in these regressions.

From table 4, we can see immediately the coefficient on education for teachers is lower than it is for all non-teachers and for non-teachers with at least 12 years of education, indicating that returns to additional education for teachers is lower than it is for non-teachers workers according to the most broad possible definition. The coefficient for experience and experience squared is more difficult to interpret because experience is included as a quadratic term in order to control for non-linearities in the returns to experience[2].The results obtained in table 4 are represented in figures 6 and 7 for education and experience, respectively.

FIGURE 6: Returns to Education (2007)

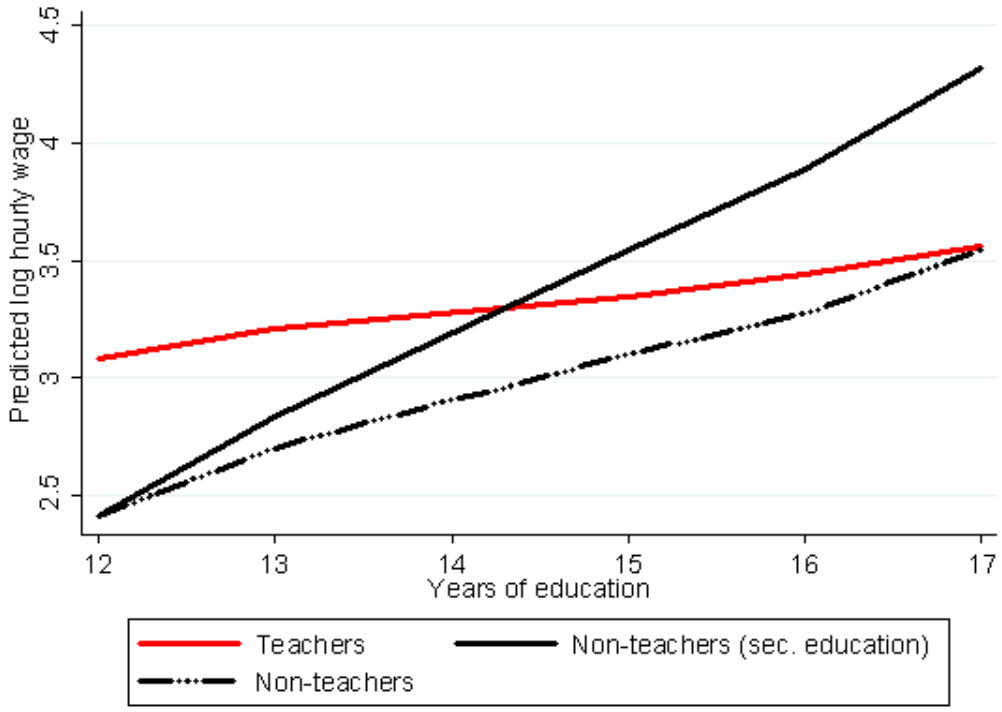
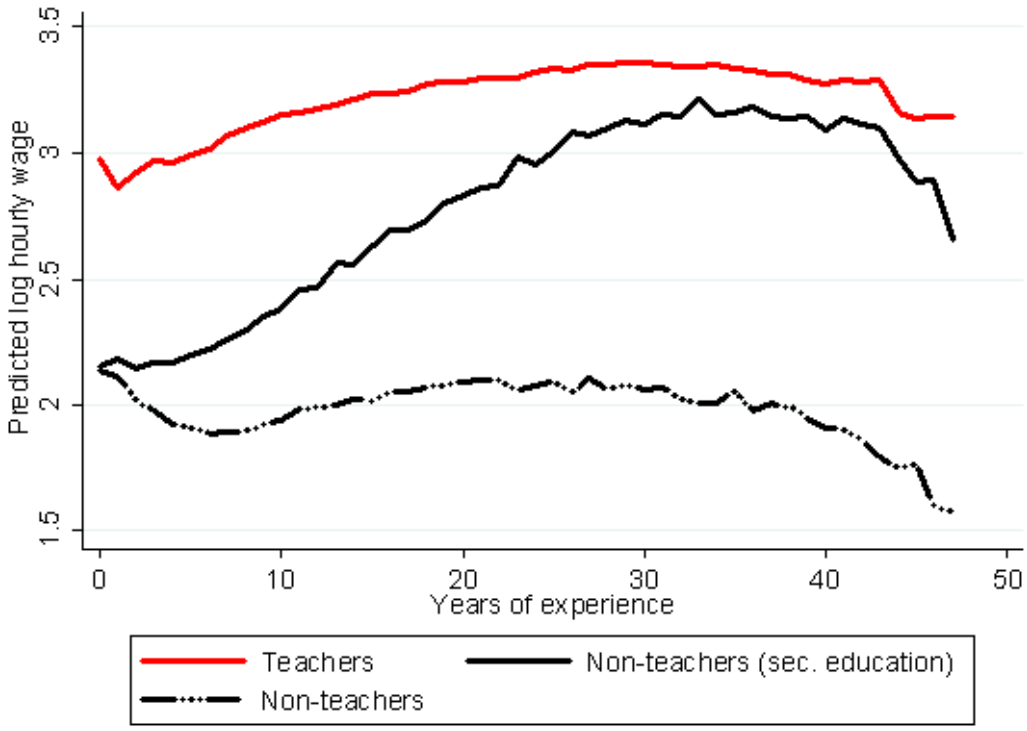


Figure 6 indicates that after 14 years of education, returns to education drop below those of non-teachers with at secondary school education. Furthermore, the gap between the 2 increases at higher levels of educational attainment. Although returns to education are higher for teacher than for the entire sample of non-teachers in the labour market, it appears that the increase in wages associated with higher levels of educational attainment are larger for this

[2]Non-linearities occur when there are different levels of returns to different levels of experience. For example, workers' wages may increase by a large amount for the first 10 years that they work. After these 10 years, although their wages still increase as they gain more experience, they increase by a smaller amount for higher levels of experience.

group as the wages for teacher and for all non-teachers converge over the range of levels of education.

FIGURE 7: Returns to Experience (2007)



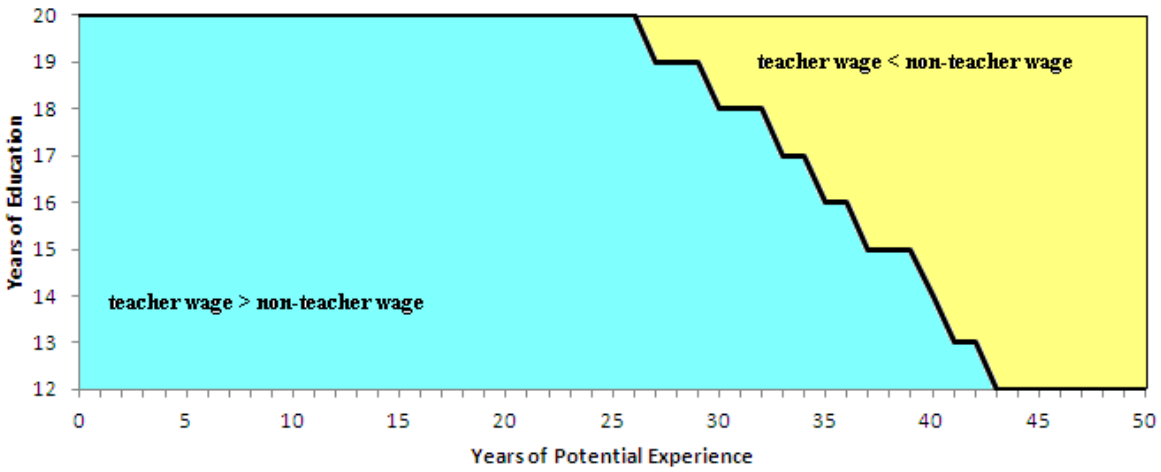
An important finding emerges from figure 7. The shape of the experience-wage profile (or the age-wage profile) of teachers is markedly flatter than it is for non-teachers with a minimum of 12 years of education. This indicates that the increase in wages associated with remaining in the teaching force is significantly lower than it is for relatively well educated workers in non-teaching professions. It is indeed a stark illustration of the disincentive for individuals to remain in the teaching profession or perhaps even to become teachers in the first place, given the unattractive prospects for wage growth over their teaching career.

It may be useful to explain the shape of the Mincerian curve with regards to returns to experience. From figure 7 (and from figure 2 earlier), we see that the returns to experience are convex. The convexity in the curve results from the fact that the productivity returns to more years of labour market experience are higher at younger ages (and therefore at lower levels of experience) than they are at higher ages and therefore higher levels of labour market experience. This convexity implies that younger people become more productive for a given amount of additional labour market experience than do older people for the same amount of additional labour market experience. An example of why this may be the case (and indeed a reason why this effect may have intensified) is the earlier exposure of younger generations to technology, enabling them to use technology more productively than members of older generations. This may explain why we witness a drop in earnings after a certain age, as shown in both figures 2 and 7 above.

An interesting way to look at the issue of relative teacher pay is to simulate teacher wages and non-teacher wages using the coefficients obtained in table 4 and for each level of education,

calculate the level of experience workers in non-teaching professions become more attractive (in terms of remuneration) than teaching. These simulations are conducted in figures 8 and 9.

FIGURE 8: Wage differential between teacher and non-teacher workers (2000 – 2007)

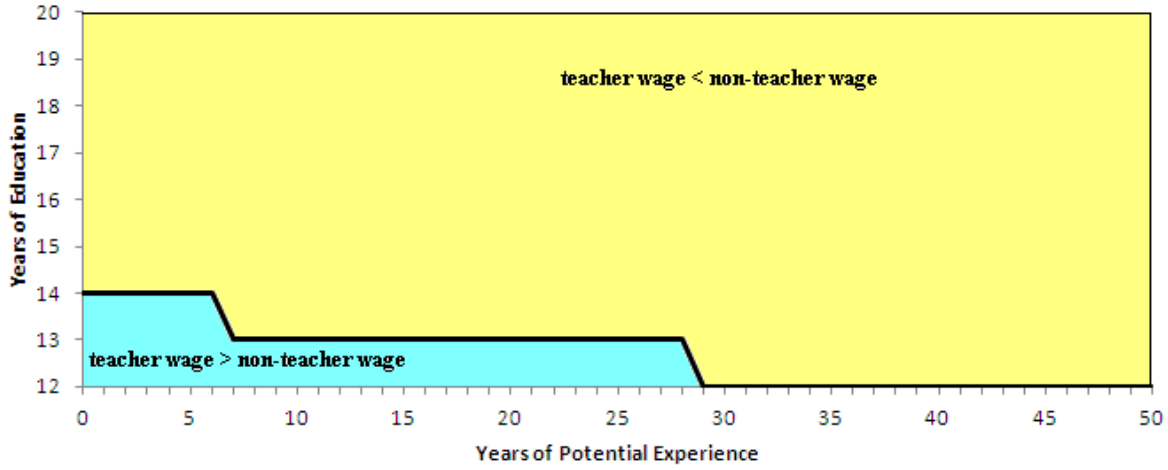


Source: Own calculations from LFS (March and September) 2000 – 2007, Stats SA.

Figure 8 presents the simulation for teachers and all non-teacher workers in the South African labour market. The jagged line moving through the figure represents the education-experience combinations (controlling for other worker characteristics) at which non-teacher wages become larger than teacher wages. For example, for workers with 13 years of education, the wage earned as a teacher will be higher than what is earned as a non-teacher until 41 years of experience, after which the non-teacher wage will become higher. For individuals with 20 years of education, wages earned as a teacher will be higher than those earned by non-teachers until 26 years of experience, after which non-teacher wages will be higher. It clear that at higher levels of educational attainment, non-teacher wages "overtake" teacher wages after fewer years of labour market experience – an indication that for highly education individuals, teaching becomes a relatively unattractive profession quicker than it does for individuals with lower levels of education.

Figure 9 presents the simulation for teachers and non-teachers with at least 12 years of education.

FIGURE 9: Wage differential between teacher and non-teacher workers with at least 12 years of education (2000 – 2007)



Source: Own calculations from LFS (March and September) 2000 – 2007, Stats SA.

From figure 7, we see that for individuals with more than 14 years of education, teacher wages are below those of non-teachers at all levels of experience. The teaching profession is therefore relatively unattractive to anyone with very high levels of educational attainment. Therefore, using the coefficient obtained in table 4, it is clear that when comparing the wages of teachers to those of non-teacher workers with at least complete secondary education, the teaching profession is fairly unattractive for highly qualified individuals.

This analysis shows for individuals with high levels of education, the teaching profession is not an attractive option in terms of remuneration. It shows that the returns to high levels of education are higher for non-teachers with at least secondary schooling, and that in other prominent occupations within the demographic groups of which a high proportion of individuals are teachers, the returns to high levels of education are higher than they are for teachers. With regards to remuneration for experience, the "age-wage" profile (the rate at which wages increase as an individual gets older) for teachers is remarkably flat, indicating a substantial lack of incentive for teachers to remain in the profession, particularly those with high levels of education.