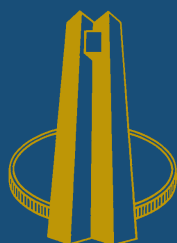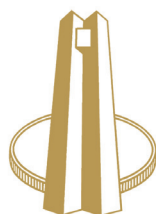# Labour Market Frontiers

October 2006
Number 8

South African Reserve Bank

Labour Market Frontiers

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ISSN: 1811–9441

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Contents

Editorial overview

Previous volumes of *Labour Market Frontiers* have made useful contributions on important labour market topics such as rising female labour force participation, the changing pattern of employment and labour market churning. Given the high level of unemployment in South Africa, it is fitting that labour research should focus on the nature and dynamics of participation, employment and unemployment. Nevertheless, if the functioning of the labour market is to be fully explained, it is vital to also have an understanding of another key labour market variable, namely wages.

This volume presents some new research on the growth in wage levels and the distribution of wages in the South African economy. All three articles make use of data from Statistics South Africa's biannual *Labour Force Survey* (LFS) of approximately 30 000 households. The LFS collects detailed labour market information for all persons over the age of 15 residing in these 30 000 households. It collects information on the earnings of the employed and the self-employed in all occupations and industries in both the formal and informal sectors. In addition, it is possible to distinguish in the data between private and public-sector employees.

The first article in this volume attempts to construct a time series of wage data for the period 1995 to 2005 using these household survey data. Naïvely considering a comparison of mean wages at the beginning and end of this period would lead one to reach the conclusion that real wages have been declining. However, the authors show that this conclusion would be incorrect. They carefully construct a series in which only comparable workers are retained and extreme outliers are discarded. They find no clear evidence of either an increase or a decrease in real wages in the informal sector. They do, however, find evidence that earnings in the formal sector have risen slightly in real terms over the post-apartheid period. The rise in average formal-sector earnings was driven by an increase in the earnings of skilled workers as the earnings of unskilled and semi-skilled workers remained flat over the period. The gap in earnings between men and women initially widened in the post-apartheid period, but it seems to have been narrowing since 2000. Similarly, the gap between White and African workers initially widened, but has been narrowing since 2003.

The second article uses a variety of measures to investigate wage inequality by occupation, sector, race and gender. The authors show that South Africa is still characterised by huge wage inequalities, which manifest themselves along racial, gender, industry and education lines. Using a multivariate framework, the authors find that the racial gap in earnings narrowed between 2001 and 2005, while the gender gap widened. Holding everything else constant, they find that wages are lowest in the agricultural, construction and private household sectors and they are highest in the electricity, gas and water supply sector.

The third article in this volume looks at labour market earnings in the public sector relative to the private sector. The sheer size of the public sector – which employs one-fifth of formal-sector workers – makes it worthy of individual study. The author finds that the degree of wage dispersion in the public sector is much lower than in the private sector. This is because workers in unskilled occupations earn substantially more in the public sector than they would in the private sector, while the converse is true for highly skilled and managerial occupations. Thus, while the public sector pays better, on average, than the private sector, this is not the case at the upper end of the wage distribution. Most significantly, the wage reduction associated with being African, Coloured or female is substantially smaller in the public sector than it is in the private sector.

Income inequality is a key policy concern in South Africa. Given that about three-quarters of household income originates in the labour market, the distribution of jobs and the extent of wage inequality are major drivers of overall income inequality. The articles in this volume suggest that wage inequality has not fallen over the post-transition period. Indeed, the wages of higher skilled workers have risen while those of low and middle-skilled workers have been stagnant. The missing part of the link to household inequality is an analysis of the distribution of jobs across the income distribution. It is hoped that this topic can be tackled in a future volume.

Lead Editor: I Woolard

Wage trends in post-apartheid South Africa: Constructing an earnings series from household survey data*

Rulof Burger and Derek Yu, Department of Economics, Stellenbosch University

Introduction

Recent research on South African labour-market trends has suggested that workers have, on average, experienced a substantial decrease in their real wage earnings in the post-apartheid era. This paper will show that this claim is based on choosing datasets on either side of Statistics South Africa's changeover from the *October Household Survey* (OHS) to the *Labour Force Survey* (LFS), which caused a discontinuous and inexplicably large drop in average earnings. By using all the household datasets after 1994, one can attempt to identify and address the sources of data inconsistencies across surveys in order to construct a more comparable earnings time series. Taking account of the inconsistencies in questionnaire design and the presence of outliers, it is possible to construct a fairly stable earnings series for formal-sector employees. The data show an increase in real wage earnings in the post-transition period for formal-sector employees, and do not appear to provide strong evidence of decreasing wages in the informal economy. The paper also investigates the change in the distribution of earnings, as well as mean earnings trends by population group, gender and skill category.

Comparability problems of the OHS and LFS earnings data

Though it is widely accepted that the OHS and the LFS datasets cannot be easily compared, these difficulties are often overlooked when constructing a longer time series. A comparison of the average real monthly earnings[1,2] of all workers in the 1995 OHS and September 2005 LFS datasets shows a decline from R3 558 to R2 744. This entails a 23-per-cent decrease in earnings, or an average decline of 2,6 per cent per annum, which is similar to the decline reported in Casale et al.[3] (2005:10), though they acknowledge the problem of comparability when they warn that "part of the fall in average [informal-sector earnings] may be due to the more efficient capture of low-paid work" (2005:13). Figure 1.1 shows average real monthly earnings for each of the five OHS from 1995 to 1999 and the twelve LFSs from March 2000 to September 2005.

Figure 1.1   Average real monthly earnings at constant 2000 prices, 1995 – 2005
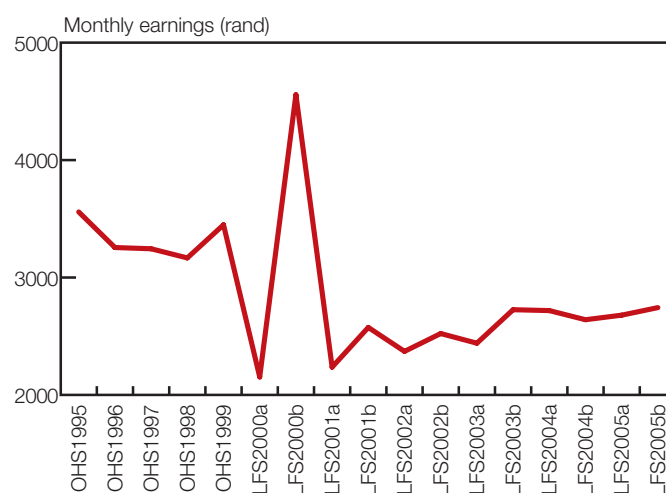
Source: Statistics South Africa and own calculations

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1 Nominal earnings were converted into real earnings (expressed in 2000 prices) using the South African Reserve Bank's CPI series (KBP7032N). It was decided to use this series, rather than the non-agricultural GDP deflator, since it should provide a more accurate measure of changes in the purchasing power of workers.

2 For each survey, all respondents who reported an earnings interval only were used to estimate interval regressions of the log of the interval thresholds on a constant only. This provides estimates for the average and variance of the log of earnings distribution for interval reporters. Each observation was then assigned the mean value, conditional on falling within the reported interval, as its earnings. This method provides open-interval values that are less volatile between surveys than what was obtained using a Pareto distribution, but preliminary analysis indicates that statistical inference is not sensitive to the method used to address this issue. Von Fintel, D. 2006. *Earnings Bracket Obstacles in Household Surveys – How Sharp are the Tools in the Shed?* Stellenbosch Economic Working Paper 08/06, Stellenbosch University, Stellenbosch.

3 Casale, D, Muller, C and Posel, D. 2005. *Two Million New Jobs: A Reconsideration of the Rise in Employment in South Africa, 1995 – 2003*. DPRU Working Paper 05/97. Cape Town: Development Policy Research Unit.

Using all the available surveys reveals that rather than being characterised by a steady decline, real wages were fairly stable over most of this period except for a 38-per-cent drop associated with Statistics South Africa's replacement of the OHS with the more consistent LFS. It is also clear that average earnings were dramatically higher in the September 2000 LFS than in the surveys directly preceding and following it.

Outliers

The problem of statistical inference with datasets containing outliers is well documented (Greene, 2003: 60, for example[4]). If the present analysis of wage trends is sensitive to the presence of certain observations and some of these are not representative of the underlying data generating process, then including the latter risks leads to misleading conclusions. This section will attempt to show that the mean earnings in certain years have indeed been very sensitive to the presence of a small number of high-income earners, some of whom may actually represent coding errors.

Table 1.1 displays the number (and unweighted proportion, in brackets) of observations with earnings above different threshold values in the different surveys. The first column reports the number of

Table 1.1: Number of observations falling above outlier thresholds

|	Observations			
	All non-missing	> R83 334 pm	> R200 000 pm	> R1 000 000 pm
OHS1995	30 855	108 (0,35 per cent)	11 (0,04 per cent)	0 (0,00 per cent)
OHS1996	13 751	20 (0,15 per cent)	0 (0,00 per cent)	0 (0,00 per cent)
OHS1997	25 462	37 (0,15 per cent)	3 (0,01 per cent)	0 (0,00 per cent)
OHS1998	15 887	35 (0,22 per cent)	1 (0,01 per cent)	0 (0,00 per cent)
OHS1999	22 860	46 (0,20 per cent)	23 (0,10 per cent)	3 (0,01 per cent)
LFS2000a...	9 675	3 (0,03 per cent)	3 (0,03 per cent)	0 (0,00 per cent)
LFS2000b...	26 801	23 (0,09 per cent)	15 (0,06 per cent)	12 (0,04 per cent)
LFS2001a...	27 833	5 (0,02 per cent)	1 (0,00 per cent)	1 (0,00 per cent)
LFS2001b...	24 441	4 (0,02 per cent)	1 (0,00 per cent)	0 (0,00 per cent)
LFS2002a...	26 459	1 (0,00 per cent)	0 (0,00 per cent)	0 (0,00 per cent)
LFS2002b...	23 362	2 (0,01 per cent)	2 (0,01 per cent)	0 (0,00 per cent)
LFS2003a...	23 209	1 (0,00 per cent)	0 (0,00 per cent)	0 (0,00 per cent)
LFS2003b...	22 564	2 (0,01 per cent)	2 (0,01 per cent)	0 (0,00 per cent)
LFS2004a...	22 900	1 (0,00 per cent)	0 (0,00 per cent)	0 (0,00 per cent)
LFS2004b...	23 378	1 (0,00 per cent)	1 (0,00 per cent)	0 (0,00 per cent)
LFS2005a...	24 560	0 (0,00 per cent)	0 (0,00 per cent)	0 (0,00 per cent)
LFS2005b...	24 625	6 (0,02 per cent)	1 (0,00 per cent)	1 (0,00 per cent)
Total	388 622	295 (0,08 per cent)	64 (0,02 per cent)	17 (0,00 per cent)

Note: Threshold values are expressed at constant 2000 prices

4   Greene, W H. 2003. Econometric Analysis, 5th edition. New Jersey: Prentice Hall.

employed who reported earnings for each survey. The next three columns show the number of observations that reported monthly (annual) real wage earnings exceeding R83 334 (R1 million), R200 000 (R2,4 million) and R1 million (R12 million).

Given the average real monthly earnings of R2 870 over the 1995 to 2005 period, these observations are all clearly far from representing "typical" South African wage earners. The third and fourth columns show evidence of high earning outliers, particularly for the 1999 OHS and the September 2000 LFS. Even at the lowest outlier cut-off of R83 334, the share of these observations that comprise total wage earners is only 0,08 per cent in all periods, and never exceeds 0,35 per cent in any single period. Notwithstanding, excluding these outliers is successful in reducing much of the variability in the wage series, as demonstrated in Figure 1.2.

Figure 1.2 Average real monthly earnings at constant 2000 prices adjusted for outliers, 1995 – 2005
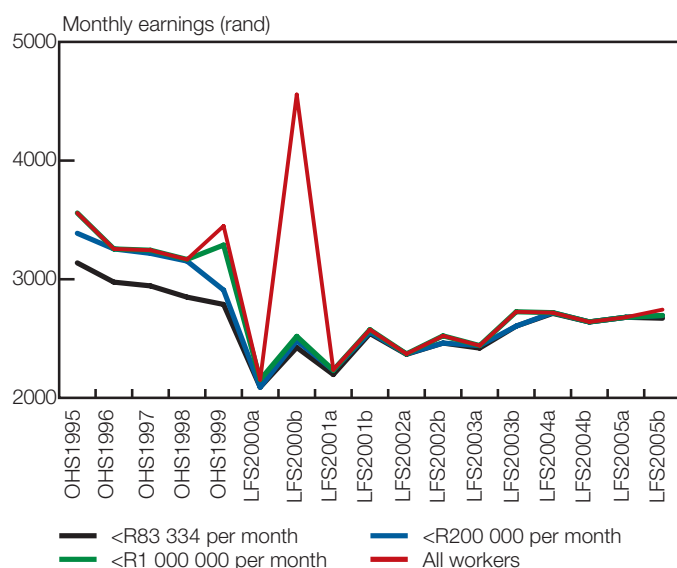
Source: Statistics South Africa and own calculations

Omitting the 12 respondents who claimed to be receiving monthly earnings of more than R1 million in September 2000 reconciles the LFS for that period – which had been so notably out of line – with the immediately preceding and subsequent surveys. Of

the seventeen workers who claimed to be earning more than R1 million per month in all periods, ten were employed in semi-skilled and four in unskilled occupations, which raises the possibility that this is a problem of incorrect responses or coding errors rather than outliers. None of the other surveys are noticeably affected by the omission of these observations, except for a small drop in mean earnings in the 1999 OHS.

Moving to an outlier threshold of R200 000 per month only has a substantial impact on the average earnings in 1999 and, to a lesser extent, in 1995 and September 2003. When also excluding those workers earning more than R83 334 per month, this has a noticeable effect on the mean earnings of all the years before 2000, but on none of the years thereafter. This is mainly due to changes in the earnings intervals that individuals were allowed to specify without revealing their exact incomes, which permitted all workers in 1995 and the self-employed in 1996 to 1998 to answer in higher income brackets than were available to respondents in the subsequent years. For the remainder of the paper, only workers reporting monthly earnings of less than R83 334 will be included in the analysis.

Removing these outliers does not overturn the observation that wages declined between 1995 and 2005, although this fall is smaller than that of the unadjusted wage series (15 per cent compared to 23 per cent). The discontinuous drop in earnings during the five months between October 1999 and March 2000 is still present, although somewhat smaller (25 per cent compared to 38 per cent).

Inconsistent capturing of employment

Measuring informal-sector activities is notoriously difficult, but the increasing efficiency with which informal employment has been captured in the household surveys since the earliest OHS has received much attention (see for example Devey et al.[5], 2003:12, and Casale et al., 2005:3). Although we do not attempt to provide a comprehensive description of changes to the questions asked by Statistics South Africa in order to distinguish between the employed, the unemployed and the inactive, it is indicative of the increased effort to capture low-paid workers to look briefly at the first question asked by fieldworkers to determine the labour-market status of respondents.

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5   Devey, R, Skinner, C and Valodia, I. 2003. Informal Economy Employment Data in South Africa: A Critical Analysis. Paper presented at the TIPS and DPRU Forum, 8 – 10 September 2003, Johannesburg.

In 1995 and 1996, respondents were asked "what [they did] most during the preceding 7 days", and were allowed to choose between "working full-time" and "working part-time" as answers. For the 1997 and 1998 surveys, a third alternative, "casual worker", was added to the questionnaire and 1999 also specified "seasonal worker" as an option. Starting in 2000, respondents were asked whether they engaged in any one of a number of specific, mostly low-income activities (e.g. "guarding cars" or "making things for sale"). If a substantial share of workers did not perceive themselves to be employed full-time or part-time, but were rather involved in casual or seasonal employment or any of the other categories added since 2000, then one would expect the surveys to show an increase in the employment of low-income earners between 1995 and 2000, combined with an associated decrease in the average earnings of all captured workers. But this apparent rise in low-income employment and the associated decrease in average earnings are both statistical artifacts, produced by changes in the sampling method.

Figure 1.3 compares the share of informal-sector workers[6] comprised of total employment with average real monthly informal-sector earnings. Informal-sector employment increased from about 5 per cent of total employment in 1995 and 1996 (during which years only the self-employed were classified as informal-sector workers) to 14 per cent in 1997 and 1998 and continued on this upward trend, before stabilising at a share of around 21 per cent after 2001. Average informal wage earnings decreased dramatically between 1995 and 2000, the years during which the improved capturing of low-income workers occurred, but have been stable since 2000. Although it is possible that South Africa experienced an increase in the size of its informal sector between 1995 and 2000 and that this induced a decrease in informal-sector earnings, the magnitudes of these shifts are such as to suggest that the observed trends are mainly driven by Statistics South Africa's improved ability to capture low-paying informal activities during the OHS years.

The likely classification of a large proportion of low-earning informal-sector workers as unemployed or inactive in the earlier surveys means that the average informal-sector wage would have been upwardly

biased for these years. Unfortunately there does not seem to be a way to adjust the earlier surveys in order to create a comparable earnings series going back to 1995 for the informal sector or, by extension, for the whole economy. However, it is possible that a comparable formal-sector wage series can be obtained by excluding informal-sector workers.

Figure 1.3   Informal-sector real monthly earnings at constant 2000 prices and share of total employment, 1995 – 2005

Source: Statistics South Africa and own calculations

In Figure 1.4 the average monthly earnings and the employment share of the self-employed are compared. Since roughly two-thirds of informal-sector workers are also self-employed, there are many similarities between Figures 1.3 and 1.4. Again, the increase in the self-employed share of total employment between 1995 and 2000 is implausibly large, and probably reflects the improved capturing of low-paid self-employed workers. Furthermore, the 70-per-cent drop in self-employed earnings during the five months between October 1999 and March 2000 (combined with an 11-percentage-point increase in their employment share) is the main reason for the discontinuous decrease in earnings associated with the introduction of the labour force surveys. Following this discontinuity, the earnings of the self-employed have, on balance, increased substantially.

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6   This includes those working in subsistence agriculture, since their employment share and average earnings suffer from the same inconsistencies as those of the rest of the informal sector. Using information on the worker's occupation, it is possible to identify domestic workers in a more or less consistent manner between 1995 and 2005. This claim appears to be verified by the relative stability of the employment share and earnings for this group over time. Since we are interested in constructing an earnings series that is as representative of the labour force as possible, domestic workers are not excluded together with the other informal-sector workers. Although it deviates from the usual and correct use of the term, for the sake of convenience "formal sector" will henceforth also include domestic workers.

Figure 1.4   Self-employed real monthly earnings at constant 2000 prices and share of total employment, 1995 – 2005

Source: Statistics South Africa and own calculations

Figure 1.5   Average real monthly earnings at constant 2000 prices by type of employment, 1995 – 2005
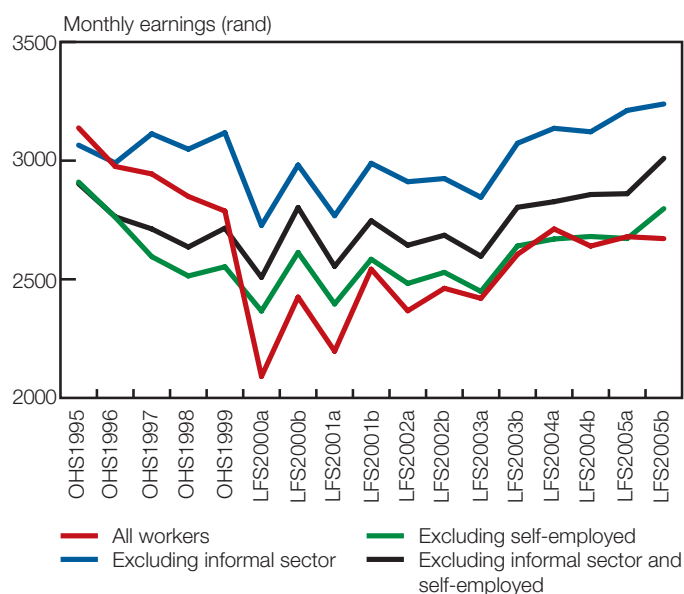
Source: Statistics South Africa and own calculations

Figure 1.5 compares the wage series for all workers (excluding those reporting monthly earnings of more than R83 334) to the wage series for formal-sector workers only (both employers and employees), all employees (in contrast to the self-employed) and formal-sector employees. Excluding the informal sector entails an upward adjustment in wages, and removes about half of the discontinuous fall in wages between 1999 and 2000. Removing only the self-employed, however, has the effect of decreasing the average earnings for the OHS years, but increasing it in the early LFS years, and yields a relatively smooth wage series without any large discontinuities. Excluding both the self-employed and the informal sector provides a wage trend for formal-sector employees, which is relatively stable over time. Instead of showing a 23-per-cent decrease in wages between 1995 and 2005, this series suggests that average earnings were marginally higher (4 per cent) in September 2005 than in October 1995.

Pooling the March and September rounds of the LFS into a single annual observation also reduces some of the series' volatility (average earnings are usually slightly higher in the September than in the March

rounds). This annual series indicates that the earnings of formal-sector employees declined by 9 per cent between 1995 and 1998, but then increased by 11 per cent between 1998 and 2005. Figures 1.3 and 1.4 also reveal that except for the fall in average earnings associated with the improved capturing of low-income workers, there is no indication that average earnings have actually decreased for informal-sector workers or the self-employed since 2000.

Despite comparability issues, Figure 1.6 compares the growth in the national accounts series total compensation of employees as reported in the South African Reserve Bank's *Quarterly Bulletin,* to that derived from the household surveys (after excluding outliers, the self-employed and informal-sector workers). The national accounts series refers to the annual growth rate in KBP6000J, deflated by KBP7032J. It is more comparable and smoother, and uses information from more sources than just the *Survey of Employment and Earnings (SEE).* The two series are very different prior to 1998, but fairly similar between 1998 and 2005[7,8]. The post-1998 trend of the constructed household survey earnings series therefore seems to be corroborated by an independent data source.

7   *This is not true for the level of total earnings, which is much lower in the household surveys than in the national accounts series.*

8   *The convergence of the two trends after 1998 could be due to the greater consistency in the sampling method used by the more recent household surveys.*

Figure 1.6   Growth in total real remuneration of employees, 1995 – 2005
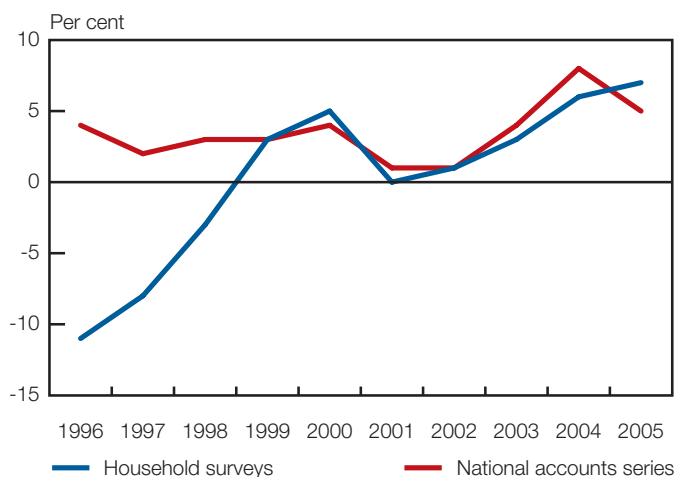
Source: South African Reserve Bank; and own calculations

The change in the earnings distribution

The previous sections looked only at changes in mean earnings, but for many purposes – investigating the impact of labour-market trends on poverty, for instance – changes in the distribution of earnings are equally important. Figure 1.7 displays the distribution of real earnings (on a log scale) in 1995, 1998 (the year in which average real earnings appear to have bottomed out), and 2005. Between 1995 and 1998 the data show a leftward shift in the earnings distribution, which is also reflected in the decreasing average earnings over this period (shown in Figure 1.5). It can be observed that this decrease was partly the result of a decline in the share of very high income earners, but was mainly driven by a large increase in the density at the lower end of the earnings distribution. The household surveys suggest that the proportion of formal-sector employees earning less than R600 per month nearly doubled from 11 per cent to 19 per cent over this period.

In addition to the decrease in average earnings, the household surveys therefore suggest that the period between 1995 and 1998 was also characterised by a worsening in the distribution of earnings. This trend was reversed after 1998, however, as the data show a decline in the density at the very bottom of the distribution, but an increase in the proportion of employees just above this lowest category: The share of workers earning less than R400 per month decreased from 14 to 8,5 per cent, while the percentage of those earning between R400 and

R1 200 increased from 22 to 31 per cent. It follows that except for the increase in mean earnings, many of the very lowest formal-sector wage earners must have experienced an increase in their incomes between 1998 and 2005.

Figure 1.7   Distribution of formal-sector real monthly earnings at constant 2000 prices (log scale)
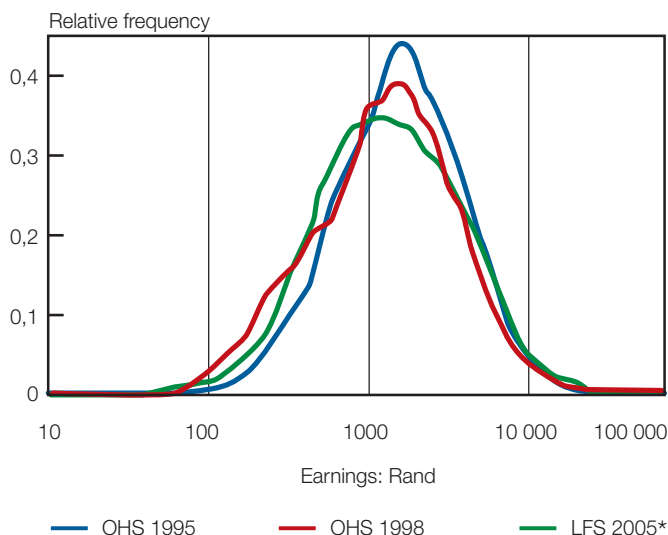
*LFS a+b combined
Source: Statistics South Africa and own calculations

Wage trends in the post-transition period

The preceding sections showed how a comparable earnings series can be derived from the household surveys by excluding outlier observations, the self-employed and informal-economy workers. This series can now be used to investigate post-transition wage trends (for formal-sector employees earning less than a million rand per year), by population group, gender and skill category. Figure 1.8 compares the average real monthly earnings for each of South Africa's population groups, and shows that all four groups experienced an increase in real wages between 1995 and 2005, although the increase was smaller for Africans than it was for the other three racial categories. The average earnings of Whites increased relative to that of the other population groups over the period as a whole, but since 2003 their earnings have shown a small decrease whereas those of African and Coloured workers increased by 16 and 18 per cent, respectively.

Figure 1.8 Average formal-sector real monthly earnings at constant 2000 prices by population group, 1995 – 2005

Monthly earnings (rand)

* LFS a+b combined
Source: Statistics South Africa and own calculations
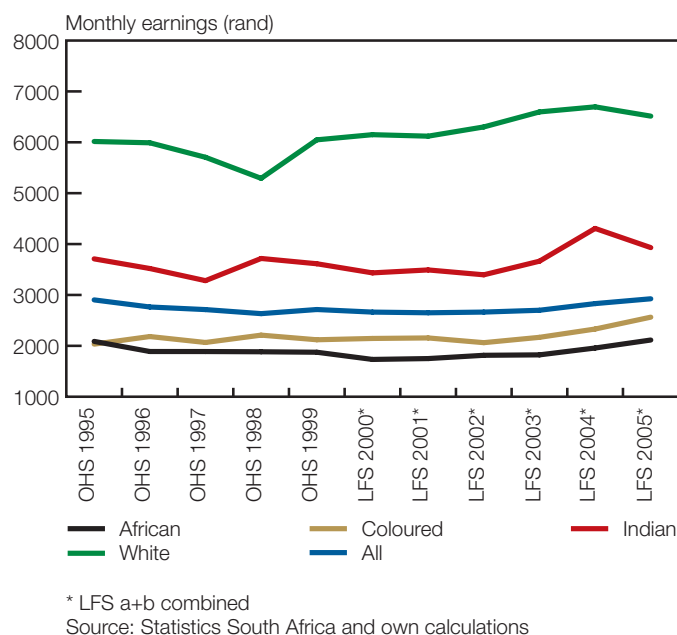
Figure 1.9 Average formal-sector real monthly earnings at constant 2000 prices by gender, 1995 – 2005

Monthly earnings (rand)

* LFS a+b combined
Source: Statistics South Africa and own calculations
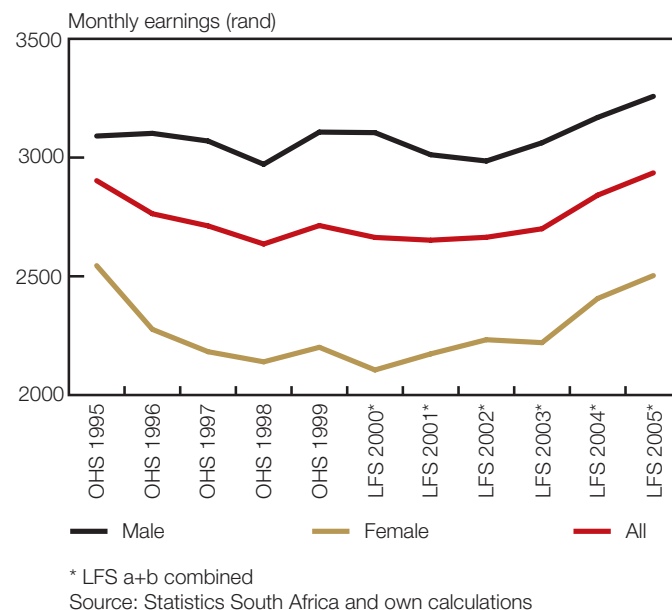
The wage trends for male and female workers are presented in Figure 1.9. Women experienced a sharper fall in their earnings between 1995 and 1998, so that by 2005 average female earnings were still slightly below the 1995 level, whereas average male earnings were about 5 per cent higher. The relative earnings differential increased over the period as a whole, although there has been a narrowing of the gender wage gap since 2000.

Figure 1.10 reveals the earnings trends for workers employed in the different skill categories[9]. Evidently, the earnings of unskilled and semi-skilled workers were slightly lower in 2005 than they were in 1995, whereas skilled earnings increased substantially over the same period. This is consistent with what one would expect to see in an economy with a shortage of skilled labour and an abundance of low-skilled unemployed[10]. After a large decrease in their earnings between 1995 and 2002, the wages of unskilled workers increased by 27 per cent between 2002 and 2005, whereas the earnings growth of the highly skilled appear to have slowed down. One of the factors which may have contributed to the higher unskilled wages is the broadening of minimum wage legislation.

The post-transition period as a whole therefore appears to be characterised by increasing inequality

between groups, with little gains of the average wage increase accruing to women, the non-white population groups, or unskilled workers. Somewhat more optimistically, it seems that the accelerating growth

Figure 1.10 Average formal-sector real monthly earnings at constant 2000 prices by occupation, 1995 – 2005

Monthly earnings (rand)

* LFS a+b combined
Source: Statistics South Africa and own calculations

9   "Unskilled" refers to workers employed in ISCO category 9 as well as domestic workers, "semi-skilled" refers to those in categories 4 – 8 and "skilled" refers to those in categories 1 – 3.

10   Altman, M. 2005. Wage Trends and Dynamics in South Africa. Review of Labour Markets in South Africa. Pretoria: Human Sciences Research Council.

experienced by the country since 2000 may recently have started to trickle down to low-income earners. The racial earnings gap has been narrowing since 2003, whereas the gender gap has been narrowing since 2000.

Conclusion

This paper attempts to show that by addressing certain obvious shortcomings in the household survey datasets, it is possible to construct a wage series which is fairly stable over time and for which the trend is broadly supported by data from the SEE (at least from 1998 onwards). It also shows that claims of declining real wages in the post-apartheid years rely crucially on choosing surveys on either side of the 1999 – 2000 discontinuous decrease in earnings. Such claims therefore implicitly accept that the dramatic drop in informal and particularly self-employed earnings between October 1999 and March 2000 is a true reflection of what occurred in the South African labour market rather than representing a change in Statistics South Africa's sampling or questionnaire design.

This paper constructs a wage series for South African formal-sector employees (as well as domestic workers) earning less than R1 million per year, and demonstrates that the real earnings for these workers showed a small increase over the 1995 to 2005 period. Except for unrealistically large decreases in earnings which were associated with the improved capturing of low-income earners between 1995 and 2000, the earnings of informal-sector workers and the self-employed appear to have been fairly stable. Between 1995 and 1998 the household surveys suggest that South African workers experienced a decrease in their real earnings, although the remaining inconsistencies for these years could cast some doubt over at least the magnitude of this decline. After 1998 average earnings started to increase, and this period was also marked by an improvement in the distribution of earnings. Although the post-transition period as a whole did not show any improvements in the relative earnings position of women, the non-white population groups or unskilled and semi-skilled workers, there are signs that there has been a decrease in group inequality in more recent years.

Wage trends and inequality in South Africa: A comparative analysis

Thami Hlekiso and Nthabiseng Mahlo, Research Department, South African Reserve Bank

Introduction

According to a number of studies, strong positive global economic performance during the 1990s has achieved modest and consistent real wage gains for workers in most of the Organisation for Economic Co-operation and Development (OECD) countries[1]. Furthermore, the same studies show that many countries in both Africa and South Asia experienced real wage declines and increasing wage inequality levels during the 1990s. It is argued that rising global wage inequality relates to a change in the wage structure that is demand-driven, emanating from technical changes that have favoured skilled labour in the production process[2]. An analysis of the United States (US) labour market[3] concludes that the skills composition of the workforce improved over time, but that the increase in the supply of skills did not keep pace with rising demand.

Some of the trends and patterns found in other countries are also evident in South Africa. McCord and Bhorat[4], using the *October Household Survey* (OHS) data in an overview of the South African labour market, show significantly higher levels of wage inequality than in some OECD countries[5]. But, while internationally education and experience are important determinants of earnings differentials, in South Africa factors such as discrimination by race and barriers to mobility (rural/urban, formal/informal) have been associated with larger differentials than the norm[6].

This paper introduces the data underlying the analyses, and then develops two perspectives. The first examines the wage distribution within and between different South African worker groups observed between 2001 and 2005 on a descriptive note. The second attempts to quantify the importance of various factors in explaining wage differentials using regression analysis.

Data and descriptive statistics

Many analyses of wage inequality in South Africa begin by considering the quality and type of statistical sources available[7]. The period of wage analysis is important to understand wage trends. This paper uses five rounds of the *Labour Force Survey* (LFS) data from September 2001 to September 2005 to compute basic trends and cross-sectional analyses of wage inequality. The LFS covers almost 30 000 households across the country.

This paper focuses on the evolution of overall monthly median wage changes, the 95th to the 50th percentile ratio, and the share of wages accruing to different worker groups. A number of studies have stressed the importance of supply, demand and skills-biased technical change in the evolution of wage differentials across age, gender, population group, industry and education[8].

Wage inequality within and between groups of workers

This section outlines wage inequality trends with respect to industry and occupation between the years 2001 and 2005. The trend figures are deflated using the consumer price index, so that all figures are

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1. *The World Bank. 2001. Meeting employment challenges in the global economy. Spectrum, Spring. Washington, DC.*
   Betcherman, G. 2002. An overview of labor markets world-wide: key trends and major policy issues. Social Protection Discussion Paper 0205. Washington, DC: The World Bank.

2. *Kosters, M. 1998. Wage trends and inequality: measuring and interpreting. Washington, DC: The American Enterprise Institute Press.*

3. *Ibid.*

4. *McCord, A and Bhorat, H. 2003. Employment and labour market trends. Human Resources Development Review: Education, Employment and Skills in South Africa. Cape Town: Human Sciences Research Council Press and East Lansing: Michigan State University Press.*

5. *Ibid.*

6. *Standing, G, Sender, J and Weeks, J. 1996. Restructuring the labour market: The South African Challenge. An ILO country review. Geneva: International Labour Office.*

7. *Leibbrandt, M and Woolard, I. 2001. Labour Market and Household Income Inequality in South Africa. Johannesburg: DPRU/FES Conference, November.*
   Bhorat, H, Lundall, P and Rospabe, S. 2002. The South African labour market in a globalizing world: Economic and legislative consideration. Employment Paper 2002/32. University of Cape Town.

8. *Standing, G, Sender, J and Weeks, J. 1996. Restructuring the labour market: The South African challenge. An ILO country review. Geneva: International Labour Office.*

at constant 2000 rand terms. The inequality within and between groups is also analysed where race and gender inequalities are investigated by looking at different industries of employment and occupations. It should be noted that all the figures are calculated using the midpoint methodology derived by Posel and Casale[9] as explained in the box of the "Determinants of public and private-sector wages" article on page 17.

Figure 2.1 illustrates a generally rising trend in real median wages in most industries between 2001 and 2005. In 2005 the community, social and personal services and the electricity, gas and water supply industries had the highest median wages, followed by the financial intermediation, insurance, real-estate and business services and the transport, storage and communication industries. Private households and the agriculture, fishing and forestry industries had the lowest wages compared to other industries; see Annexe 2.1.

Figure 2.2 shows the trends for monthly median wages by occupation between 2001 and 2005.

This monthly wage trend is not uniform, displaying increases in some occupations and decreases in others. The graph shows that the higher the level of skills, the higher the monthly wages. For example the wages of the highly skilled occupations, namely legislators, senior officials and managers, professionals and technical and associate professionals are higher than those of other occupations. The legislators, senior officials and managers, on balance, show an increase from a monthly median wage of R5 678 in 2001 to R7 031 in 2005. Elementary occupations and the skilled agricultural and fishery workers have the lowest monthly wages when compared with other occupations. The graph further shows a fairly small absolute increase, but percentage-wise a very significant increase, in the elementary occupations where the monthly median wages increased from R568 in 2001 to R937 in 2005; see Annexe 2.1. This coincides with the extension of minimum wage legislation to industries that were not previously covered.

Figure 2.1   Wages at constant 2000 prices by industry, 2001 – 2005
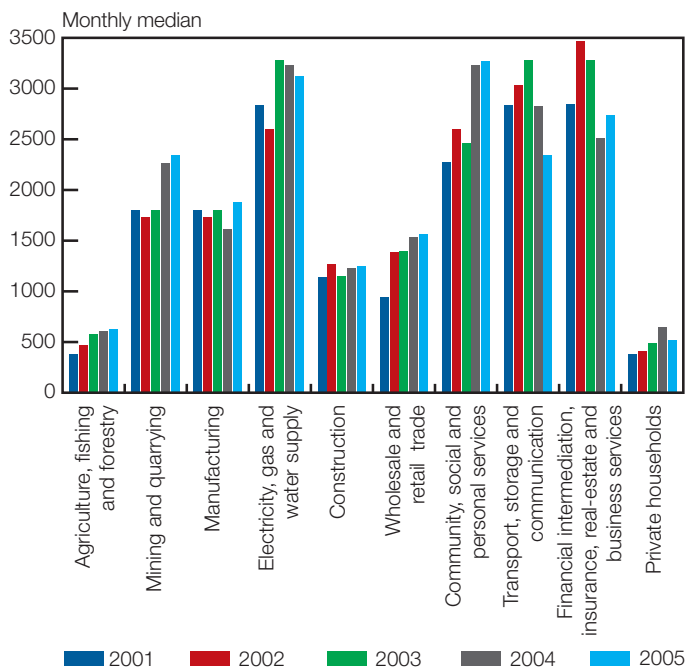
Source: Statistics South Africa, *Labour Force Survey,* September 2001 – 2005, and own calculations

Figure 2.2   Wages at constant 2000 prices by occupation, 2001 – 2005
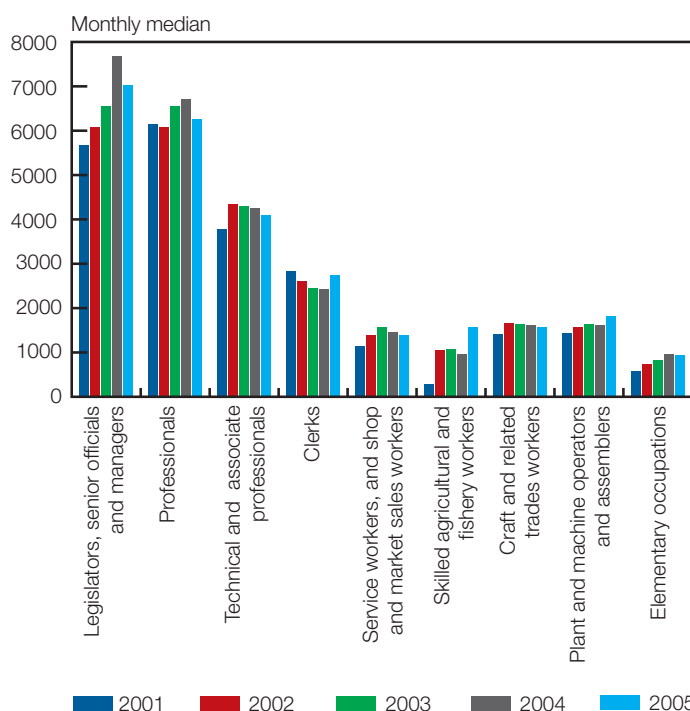
Source: Statistics South Africa, *Labour Force Survey,* September 2001 – 2005, and own calculations

9   *Posel, D and Casale, D. 2005. Who replies in brackets and what are the implications for earnings estimates? An analysis of earnings data from South Africa. Paper prepared for the Economic Society of South Africa Conference, September.*

Table 2.1 indicates the existing wage disparities within different industries. The community, social and personal services industry show the highest monthly median wages equalling R4 180 in 2005 followed by the electricity, gas and water supply with median wages of R4 000. For the same year workers in the agriculture, fishing and forestry industry and those working for private households have the lowest median wages compared to other industries with median monthly wages of R800 and R660, respectively.

The ratio of the 95th to the 50th percentile is used as an indicator showing the extent to which wage inequality within an industry exists. The highest ratio of 8,8 is recorded in the agriculture, fishing and forestry industry. This could be explained by the concentration of a large number of unskilled workers in this industry while some highly-paid, skilled farm managers are employed at the upper end of the distribution. This is followed by financial intermediation, insurance, real-estate and business services industry with a wage inequality ratio of 6,6 and thereafter construction with a wage inequality ratio of 6,3.

Table 2.1 Wage ratios by industry, 2005 (Rand, at current prices)

Industry	Percentiles		
	Monthly median wages (Rand)	95th percentile (Rand)	95/50 ratio
Agriculture, fishing and forestry	800	7 000	8,8
Mining and quarrying	3 000	15 060	5,0
Manufacturing	2 400	13 500	5,6
Electricity, gas and water supply	4 000	13 500	3,4
Construction	1 600	10 000	6,3
Wholesale and retail trade	2 000	12 000	6,0
Community, social and personal services	4 180	13 500	3,2
Transport, storage and communication	3 000	13 500	4,5
Financial intermediation, insurance, real-estate and business services	3 500	23 000	6,6
Private households	660	970	1,5

Source: Statistics South Africa, *Labour Force Survey*, September 2005, and own calculations

Table 2.2 shows the wage inequality within industries and selected population groups. African monthly median wages are the lowest between and within industries. Wages of Africans in some industries such

as manufacturing and financial intermediation, insurance, real-estate and business services deviate substantially from the median wage. More importantly, the wage inequality between the population groups still persists where Whites' median wages are far above those of their African counterparts in the same industry. This is visible in all the industries except in private households, where there were no white workers recorded in the survey.

Table 2.2 Monthly median wages by industry and population group, 2005 (Rand, at current prices)

Industry	Wages (Rand)	Percentage of electricity, gas, and water supply industry	Africans (Rand)	Whites (Rand)
Agriculture, fishing and forestry	800	20	785	5 250
Mining and quarrying	3 000	75	2 800	9 500
Manufacturing	2 400	60	2 000	7 000
Electricity, gas and water supply	4 000	100	3 000	9 500
Construction	1 600	40	1 400	7 500
Wholesale and retail trade	2 000	50	1 400	5 000
Community, social and personal services	4 180	105	4 000	7 000
Transport, storage and communication	3 000	75	2 039	7 000
Financial intermediation, insurance, real-estate and business services	3 500	88	1 960	7 000
Private households	660	17	660	-

Source: Statistics South Africa, *Labour Force Survey,* September 2005, and own calculations

The data by occupation in Table 2.3 show that legislators, senior officials and managers had the highest median wages of R9 000 per month, followed by professionals with R8 000 and technical and associate professionals with R5 250 per month. Services workers, and shop and market sales workers and elementary occupations have low median wages of R1 768 and R1 200 per month, respectively. Considering the required levels of skills in each of the occupations, it can be seen that the wages are skills-biased, meaning that occupations that require high levels of skills have higher median wages than those that do not require these skills. It should be noted that the LFS classifies occupational categories in line with the International Standard Classification of Occupations (ISCO) and also according to the South African Standard Classification of Occupations (SASCO).

Table 2.3   Wage ratios by occupation, 2005
(Rand, at current prices)

| Occupation | Percentiles | | |
	Monthly median wages (Rand)	95th percentile (Rand)	95/50 ratio
Legislators, senior officials and managers	9 000	35 000	3,9
Professionals	8 000	25 000	3,1
Technical and associate professionals	5 250	15 000	2,9
Clerks	3 500	9 500	2,7
Service workers, and shop and market sales workers ...	1 768	8 000	4,5
Skilled agricultural and fishery workers*....................	2 000	23 000	11,5
Craft and related trades workers	2 000	9 500	4,8
Plant and machine operators and assemblers....................	2 320	7 000	3,0
Elementary occupations	1 200	4335	3,6

*   This occupation category includes farmers who are engaged in subsistence farming

Source: Statistics South Africa, *Labour Force Survey*, September 2005, and own calculations

Table 2.3 shows that skilled agricultural and fishery workers have the highest wage inequality with a ratio of 11,5. This is followed by the craft and related workers industry with a ratio of 4,8. Technical and associate professionals and clerks have the lowest ratios equalling 2,9 and 2,7, respectively. Overall, significant wage inequalities exist within occupations, as may be expected.

It is not surprising that legislators, senior officials and managers, professionals, and technical and associate professionals command the highest wages according to Table 2.4. This is due to the demand for their skills. Elementary occupations have the lowest monthly median wage, such wage constituting only 15 per cent of professionals' wages. Africans in the occupation category skilled agricultural and fishery workers earn low median wages when compared to the median wages of all population groups. Other studies have found that African wages tend to differ with their White counterparts as a result of the perceived lower quality of tertiary qualifications obtained from historically Black universities[10] compared to those obtained from the previously White universities.

Table 2.5 on the opposite page shows the wage inequality within the African sample and within the White sample. It shows a generally higher inequality within the African group as compared to that of their White counterparts. Africans have a high wage inequality ratio of 4,7 for services workers, and shop and market sales workers, while that of Whites is 3,4. This means that in the category services workers, and shop and market sales workers, Africans in the 95th percentile earns approximately 5 times more than the median African worker. By contrast, a White worker falling in the 95th percentile earn approximately 3 times more than the median White worker. African legislators, senior officials and managers have a wage inequality ratio of 4,6 whereas the Whites in this category have a ratio of 3,7. The reason for the higher inequality among Africans may be due to the fact that many more Africans than Whites are concentrated in lower-paying jobs[11]. Thus, even though the Whites at the 95th percentile earn more than Africans at this

Table 2.4   Monthly median wages by occupation and population group, 2005 (Rand, at current prices)

| Occupation | All population groups combined | | Africans (Rand) | Whites (Rand) | African female (Rand) |
	Wages (Rand)	Percentage of professionals			
Legislators, senior officials and managers..................	9 000	113	5 250	9 500	6 000
Professionals	8 000	100	7 000	9 500	7 000
Technical and associate professionals	5 250	66	5 000	7 000	5 000
Clerks...	3 500	44	2 700	4 000	3 000
Service workers and shop and market sales workers	1 768	22	1 500	4 000	1 500
Skilled agricultural and fishery workers	2 000	25	800	7 000	1 000
Craft and related trades workers	2 000	25	1 600	5 400	1 700
Plant and machine operators and assemblers	2 320	29	2 000	5 250	2 000
Elementary occupations	1 200	15	960	4 000	1 200

Source: Statistics South Africa, *Labour Force Survey,* September 2005, and own calculations

10   McCord, A and Bhorat, H. 2003. *Employment and labour market trends. Human Resources Development Review: Education, Employment and Skills in South Africa.* Cape Town: Human Sciences Research Council Press and East Lansing: Michigan State University Press.

11   Altman, M. 2005. *Wage trends and dynamics in South Africa. Review of Labour Markets in South Africa.* Pretoria: Human Sciences Research Council.

Table 2.5   Wage ratios within occupations by population group, 2005 (Rand, at current prices)

Occupation	Africans			Whites		
	Monthly median wages (Rand)	95th percentile	95/50 ratio	Monthly median wages (Rand)	95th percentile	95/50 ratio
Legislators, senior officials and managers........................	5 250	24 000	4,6	9 500	35 000	3,7
Professionals	7 000	21 195	3,0	9 500	35 000	3,7
Technical and associate professionals	5 000	10 000	2,0	7 000	23 000	3,3
Clerks..	2 700	8 000	3,0	4 000	13 500	3,4
Service workers, and shop and market sales workers.......	1 500	7 000	4,7	4 000	13 500	3,4
Skilled agricultural and fishery workers	800	3 385	4,2	7 000	35 000	5,0
Craft and related trades workers	1 600	5 560	3,5	5 400	20 140	3,7
Plant and machine operators and assemblers................	2 000	6 000	3,0	5 250	23 000	4,4
Elementary occupations	960	3 500	3,6	4 000	15 400	3,9

Source: Statistics South Africa, *Labour Force Survey,* September 2005, and own calculations

percentile, there is greater variation in African wages. The lowest ratio for Africans is 2,0 which is found in the technical and associate professionals occupation and it indicates a very low level of wage inequality.

Regression results

The following model shows a wage function depicting the influence of a set of selected individual characteristics on wages earned.

The model is defined as:

$\ln$ (monthly wages) $= \beta_0 + \beta_1$(gender) $+\beta_2$(population group) $+ \beta_3$(education) $+ \beta_4$(experience) $+ \beta_5$(experience^2) $+ \beta_6$(industry) $+ \beta_7$(occupation) $+ \beta_8$(trade union)

Where:
- gender, population group, industry, occupation and trade union membership are all included as sets of dummies; and
- experience is an abbreviation for "potential work experience", measured by subtracting the age at which the worker would have been expected to complete his/her education from his/her actual age.

Table 2.6 shows the regression results of the model where weighted data from the LFS' worker file is used.

All coefficients are significant at the 5-per-cent level except the ones that are marked with an asterisk (*). The premium[12] is calculated as the anti-log of the coefficient of the explanatory variables expressed as a percentage. For example, the premium for Coloureds in 2001 is calculated as follows: $(e^{0,321}-1)\,100 = 37.9$ per cent. The R^2 statistic indicates the goodness of fit for the model and it shows that in 2001 the R^2 was 58 per cent and in 2005 it was 49 per cent. This indicates that in 2001, 58 per cent of the level of wages was explained by the chosen explanatory variables and in 2005, 49 per cent of the level of wages was explained by the chosen explanatory variables.

According to the results in Table 2.6 on the following page, gender inequality persists as reflected in the wage premium for males which has increased from 31 per cent in 2001 to 38 per cent in 2005.

African wages are low when compared with those of the other population groups, while the White population group has the highest wage premium. However, it is noticeable that the wage differences declined between 2001 and 2005. Consistent with other studies[13], an improvement of Africans' post-matric education may be associated with the decline in the White wage premium between the two years. The regression results further show that workers who have completed a postgraduate degree have a higher wage premium than those in other education categories.

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[12] See Woolard, I. 2002. *A comparison of wage levels and wage inequality in the public and private sectors, 1995 and 2000. Cape Town: Development Policy Research Unit. In this article 'wage premium' refers to increased wage associated with a given characteristic.*

[13] Bhorat, H, Lundall, P and Rospabe, S. 2002. *The South African labour market in a globalizing world: Economic and legislative consideration. Employment Paper 2002/32. University of Cape Town.*

Table 2.6   Regression results for 2001 and 2005

Dependent variable = Log of monthly wages i.e. ℓ_n (monthly wages)

	All formal sectors			
	Coefficients 2001	Premium 2001 (per cent)	Coefficients 2005	Premium 2005 (per cent)
Number of observations	16 592		16 289	
Constant	6,759		6,948	
Female..	Reference		Reference	
Male..	0,269	30,9	0,324	38,3
African	Reference		Reference	
Coloured..	0,321	37,9	0,291	33,8
Indian..	0,384	46,8	0,274	31,5
White	0,660	93,5	0,520	68,2
Matric	Reference		Reference	
No schooling	-0,852	-57,3	-0,720	-51,3
Some primary	-0,584	-44,2	-0,550	-42,3
Some secondary..	-0,304	-26,2	-0,368	-30,8
Vocational	0,095	10,0	0,220	24,6
Degree..	0,338	40,2	0,327	38,7
Postgraduate degree	0,509	66,4	0,770	116,0
Experience				
Experience..	0,014	1,4	0,013	1,3
Experience^2 (x1 000)**	-0,014	-1,382	-0,013	-1,259
Manufacturing	Reference		Reference	
Agriculture, fishing and forestry.........................	-0,656	-48,1	-0,498	-39,2
Mining and quarrying	0,121	12,9	0,242	27,4
Electricity, gas and water supply	0,094	9,9	0,080*	8,3
Construction...	-0,101	-9,6	-0,115	-10,9
Wholesale and retail trade.................................	-0,282	-24,6	-0,283	-24,6
Transport, storage and communication..............	0,121	12,9	0,066*	6,8
Financial intermediation, insurance, real-estate and business services	0,009*	0,9	0,058*	6,0
Community, social and personal services...........	-0,023*	-2,3	-0,014*	-1,4
Private households	-0,298	-25,8	-0,852	-57,3
Elementary occupations	Reference		Reference	
Legislators, senior officials and managers	0,997	171,0	0,956	160,1
Professionals	0,813	125,5	0,779	117,9
Technical and associate professionals................	0,532	70,2	0,538	71,3
Clerks	0,415	51,4	0,367	44,3
Service workers, and shop and market sales workers...	0,201	22,3	0,072	7,5
Skilled agricultural fishery workers.....................	0,743	110,2	0,547	72,8
Craft and related trades workers........................	0,286	33,1	0,188	20,7
Plant and machine operators and assemblers ...	0,156	16,9	0,184	20,2
Non-member: Trade union................................	Reference		Reference	
Member: Trade union	0,298	34,7	0,287	33,2
Other statistics				
R^2..	0,577		0,490	

*   Not significant at the 5-per-cent level

**   For interpretation purposes, the coefficient of experience^2 was multiplied by 1 000

Source: Statistics South Africa, *Labour Force Survey*, September 2005, and own calculations

The experience variable is a proxy for the level of experience that a worker has. It measures "potential work experience" by subtracting from the individual's age the age at which he/she would have been expected to complete his/her education. For example, if a person is 30 years old and has 10 years of schooling, he/she could potentially have been working since the age of 16, giving him/her "potential experience" of 14 years. This variable was used to detect if it affects the level of wage inequality. Experience squared allows for marginal returns to experience over the average working life, in line with human capital theory. Based on this, one can expect the coefficient of potential experience to be positive and the coefficient of experience squared to be negative[14]. The experience variable shows small positive values for both 2001 and 2005, suggesting that experience does have an effect on wage inequality.

Table 2.6 shows that agriculture, fishing and forestry, construction, wholesale and retail trade and private households have negative wage premiums. This may be due to the availability of a large number of unskilled workers in these industries. However, the electricity, gas and water supply and transport, storage and communication industries have higher wage premiums than manufacturing. Some authors[15] have argued that firms in the service sector including electricity, gas and water supply and transport, storage and communication reward top-end employees more than other industries. This means that the existence of higher wage premia in the above-mentioned industries is largely a result of skills shortages. Mining and quarrying has a higher wage premium despite it being in the primary sector of the economy, which could be due to the density of union membership in this industry[16]. All the other occupations show higher wages than in the elementary occupations, due to the large number of unskilled workers found in the latter sector.

The trade union premium indicates that belonging to a union helps one to get better wages than for those who do not belong to a trade union. Rospabe, however, using the OHS data found that South African trade unions use their significant wage bargaining power to favour mainly African workers' interests[17].

Conclusion

Real monthly median wages differ significantly between both industries and occupations. The results show that wage inequality persists in South Africa based on gender, race, education, industry and occupation, with education significantly stronger than the other determinants.

Occupational wage analysis shows that wage inequality is more prominent by gender and race, which may be explained in terms of differential accumulation of skills, as well as actual and perceived quality differentials in education. At the same time, industrial wage analyses show that race and gender continue to be factors in wage inequality.

The regression results also confirm that the extent of inequality changed between 2001 and 2005; for instance most wage premia associated with different variables narrowed between these years.

Policy implementation and institutional arrangements have played a significant role in reducing historical wage inequalities between and within different worker groups over the past decade. However, wage inequality persists with dimensions such as gender, schooling, industry, occupation and unionisation requiring continuous policy and institutional adaptation and implementation. The enhanced supply of skilled labour should be the most important factor to reduce wage inequality in the future.

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14 Erichsen, G, and Wakeford, J. 2001. Racial wage discrimination in SA before and after the first democratic election. Working Paper 01/49. Cape Town: Development Policy Research Unit.

15 McCord, A and Bhorat, H. 2003. Employment and labour market trends. Human Resources Development Review: Education, Employment and Skills in South Africa. Cape Town: Human Sciences Research Council Press and East Lansing: Michigan State University Press.

16 Ibid.

17 Rospabe, S. 2001. Making racial wages relations fair in South Africa: a focus on the role of trade unions. Working Paper 01/48. Cape Town: Development Policy Research Unit.

Annexe 2.1

Table A   Monthly median wages by industry, 2001 – 2005 (Rand, at constant 2000 prices)

Industry	2001	2002	2003	2004	2005
Agriculture, fishing and forestry	379	468	573	606	625
Mining and quarrying	1 798	1 734	1 802	2 262	2 344
Manufacturing	1 798	1 734	1 802	1 616	1 875
Electricity, gas and water supply	2 839	2 601	3 276	3 231	3 125
Construction	1 136	1 266	1 147	1 228	1 250
Wholesale and retail trade	946	1 387	1 392	1 535	1 562
Community, social and personal services	2 271	2 601	2 457	3 231	3 265
Transport, storage and communication	2 839	3 034	3 276	2 827	2 344
Financial intermediation, insurance, real-estate and business services	2 845	3 468	3 276	2 512	2 734
Private households	379	407	491	646	516

Source: Statistics South Africa, *Labour Force Survey,* September 2001 – 2005, and own calculations

Table B   Monthly median wages by occupation, 2001 – 2005 (Rand, at constant 2000 prices)

Occupation	2001	2002	2003	2004	2005
Legislators, senior officials and managers	5 678	6 068	6 551	7 674	7 031
Professionals	6 151	6 068	6 551	6 704	6 250
Technical and associate professionals	3 785	4 335	4 299	4 241	4 101
Clerks	2 839	2 601	2 457	2 423	2 734
Service workers, and shop and market sales workers	1 136	1 387	1 556	1 454	1 381
Skilled agricultural and fishery workers	284	1 040	1 065	969	1 562
Craft and related trades workers	1 420	1 647	1 638	1 616	1 562
Plant and machine operators and assemblers	1 438	1 560	1 638	1 616	1 812
Elementary occupations	568	737	819	969	937

Source: Statistics South Africa, *Labour Force Survey,* September 2001 – 2005, and own calculations

Determinants of public and private-sector wages in South Africa

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Introduction

Approximately 1,6 million of the 8,6 million formal-sector employees in South Africa are employed in the public sector. According to the South African Reserve Bank's June 2006 *Quarterly Bulletin*[1], employment in the public sector expanded by 4 per cent over the five-year period February 2001 to February 2006. The *Annual Economic Report*[1] of the Bank reported a slowdown in nominal wage growth in the public sector, falling from 9,1 per cent per annum in the year ending March 2005, to around 6 per cent per annum in the year to March 2006. Woolard[2] argues that the mere size of this sector deems it necessary to understand the characteristics of workers in the public sector compared to those in the private sector.

Monthly wage earnings depend on different factors. Some factors are unchangeable (e.g. gender) and others are determined by the functioning of the economy and the labour market. Due to imperfect information and markets, the labour market cannot address all inequalities, but government as an employer is compelled by the Constitution to set an example with regard to equity[3] and wage fairness.

The main objective of this article is to compare the extent to which workers' characteristics in the public and private sectors impact on their wages. While for separate analysis it might be more ideal to analyse public-sector employment and wages data from the South African Government's *Personnel and Salary System* (Persal)[4], for the purpose of comparing the public sector to the private sector, data from the *Labour Force Survey* (LFS) are used. According to Hicks et al.[5], labour force surveys are an important alternative to administrative data when comparing public-sector employment. The authors suggest that being a household survey, a labour force survey can provide important information on some characteristics of the employed.

Box: The data

All figures are based on Statistics South Africa's *Labour Force Survey* (LFS). For this analysis, only formal-sector workers for September 2001, 2003 and 2005 releases are included.

The public sector as defined by the System of National Accounts

According to the *System of National Accounts*, the public sector includes general government, the public financial corporate sector and the public non-financial corporate sector. For the purpose of this article parastatals were grouped with the private sector, and the public sector only refers to those working for local, provincial and national government.

Dealing with wages reported in brackets in the LFS

Wages reported in brackets (e.g. R1– R200) were dealt with by implementing "the midpoint method" as described in Posel and Casale*. The median wages were calculated, thereby excluding outliers to get values that represent the average worker.

Due to the personal nature of the earnings question for the LFS, not all respondents answered the question, therefore making the sample size smaller. Of those employed in the formal sector in 2001, the non-response rate for wages was 7,6 per cent, in 2003 it was 10,3 per cent, and in 2005 8,3 per cent. Only those persons between the age of 15 and 65 (working age according to Statistics South Africa) were included.

*   *Posel, D. and Casale, D. 2005. Who replies in brackets and what are the implications for earnings estimates? An analysis of earnings data from South Africa. Paper prepared for the Economic Society of South Africa Conference, September.*

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1   *South African Reserve Bank. 2006. Quarterly Bulletin, June and Annual Economic Report. Pretoria.*

2   *Woolard, I. 2002. A comparison of wage levels and wage inequality in the public and private sectors, 1995 and 2000. Working Paper 02/62. Cape Town: Development Policy Research Unit.*

3   *Ibid.*

4   *Available [online]: http://www.treasury.fs.gov.za/faq.htm*

5   *Hicks, S, Lindsay, C, Barford, N and Williams, R. 2005. Public sector employment. Labour Market Division and Employment, Earnings and Productivity Division. London: Office of National Statistics. Available [online]: http://www.statistics.gov.uk/articles/nojournal/PSE_final.pdf*

Three perspectives regarding worker compensation will be provided in this article. The first perspective is essentially descriptive, providing detail of the distribution of employment and wages between sectors and industries. The second section analyses and compares mean and median wages for public and private-sector workers. The third perspective identifies the attributes contributing to differences in monthly compensation by making use of a multi-variate model for monthly wages.

Public and private-sector wages and employment

According to the September 2005 LFS the public sector constituted 21,5 per cent of the total formal non-agricultural employed in South Africa. Statistics South Africa's *Quarterly Employment Statistics* (QES), which replaced the *Survey of Employment and Earnings* (SEE), reports public-sector employment to be 19,1 per cent of the total formal non-agricultural employed in 2005. This is similar to other countries; for example in 2005 the percentage for the United Kingdom was 20,4 per cent[6] and for Australia it was 16,0 per cent[7] of the total employed.

Table 3.1 shows the different results when measuring public and private-sector employment and wages from a business survey (QES) and from a household survey (LFS). The QES covers all employing enterprises in the formal non-agricultural business sector registered for income tax[8]. Employers working in the enterprise who are not remunerated through the firm's payroll are not included in the number of employees in the firm. The LFS, however, includes all workers from the formal and informal sectors, which could lead to workers mis-classifying themselves, and could explain why the LFS for September 2005 reports formal employment to be around 787 000 more than the QES for September

2005. The same holds true when comparing public-sector employment. Monthly average wages calculated from the QES are higher than those calculated from the LFS; this could be due to under-reporting as workers are usually only aware of their net income. Other possible reasons are inaccuracy, because it is not done from a payroll point of view, and that the LFS has non-responses, which could result in sample selection bias.

Table 3.1 further shows that according to the LFS, South Africa's public-sector employment stood at 1 510 million in September 2001 and employment in the private formal non-agricultural sector stood at 5 419 million. The SEE/QES showed public-sector employment at 1 435 million in 2001 and private-sector employment at 3 223 million. In 2005 the LFS showed public-sector employment at 1 784 million and private-sector employment at 5 790. According to the SEE/QES, public-sector employment was lower in 2005 at 1 505 million and private-sector employment was also lower than LFS at 5 605 million.

Characteristics of the public and the private sector

When analysing employment and total wages between industries for both the private and the public formal sectors, the private sector employs relatively more people in wholesale and retail trade as well as manufacturing, whereas the public sector mainly employs in the community, social and personal services sector. The LFS shows that the largest share of wages in the private sector were paid to people employed in financial intermediation, insurance, real-estate and business services. As may be expected, in the public sector the largest percentage of wages was received by workers in community, social and personal services.

Table 3.1 Total formal non-agricultural employment and monthly average wages for 2001, 2003 and 2005

	LFS 2001		SEE 2001		LFS 2003		SEE 2003		LFS 2005		SEE/QES 2005	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Employed ('000).........................	1 510	5 419	1 435	3 223	1 530	5 814	1 434	4 963	1 584	5 790	1 505	5 605
Monthly average wages (Rand, at current prices).......................	3 819	3 400	6 409	4 787	4 889	3 940	8 111	6 083	5 695	4 015	9 480	6 748

Sources: Statistics South Africa, *Labour Force Survey* (LFS)*, Survey of Employment and Earnings* (SEE)*, Quarterly Employment Statistics* (QES)*, and* own calculations. For comparison purposes the calculations exclude agriculture.

6   News Release National statistics. Available [online]: http://www.statistics.gov.uk/cci/nugget.asp?id=1292

7   Parliament of Australia research note. Available [online]: http://www.aph.gov.au/Library/pubs/RN/2005-06/06rn29.htm

8   Statistics South Africa. Available [online]: http://www.statssa.gov.za/news_archive/07July2005_1.asp

Figure 3.1 represents total employment as well as total wages received by the private formal-sector employed by industry for 2005. As already mentioned, the LFS shows that the highest level of employment in September 2005 in the private sector was in the wholesale and retail trade industry at 25,3 per cent. The largest share of wages for 2005 was paid to people employed in the financial intermediation, insurance, real-estate and business services at 24,6 per cent. This suggests that the wages in the latter sector exceed those in wholesale and retail trade. When analysing the occupations of those employed in financial intermediation, insurance, real-estate and business services, the main occupations were clerks; and service workers, and shop and market sales workers.

Of the total wage bill for the private sector, 8,8 per cent of private-sector wages in 2005 were paid to the

community, social and personal services industry. This industry also employed 8,0 per cent of private-sector workers. In comparison 88,2 per cent of the public-sector workers were employed in this industry, and they received 89,6 per cent of the wages (figure not shown). The mean wage for workers in community, social and personal services was higher in the public sector than in the private sector. Although specific differentiation is not possible, the occupational composition in this industry for both the public and the private sectors in 2005 was mainly technical and associate professionals.

Figure 3.2 describes the total formal employment and total wage distribution by occupation for the private sector according to the LFS 2005. In 2005 the largest

Figure 3.1   Private and public formal-sector employment and wages by industry, 2005
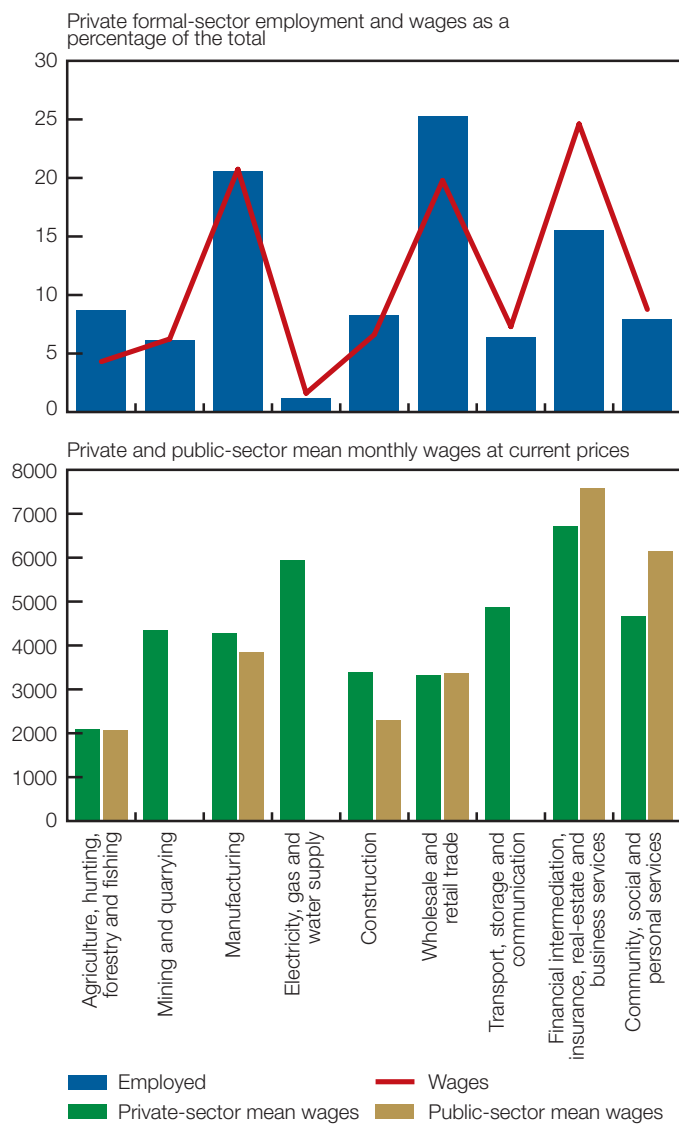
Source: Statistics South Africa, *Labour Force Survey*, September 2005, and own calculations

Figure 3.2   Private formal-sector employment and wages by occupation, 2005
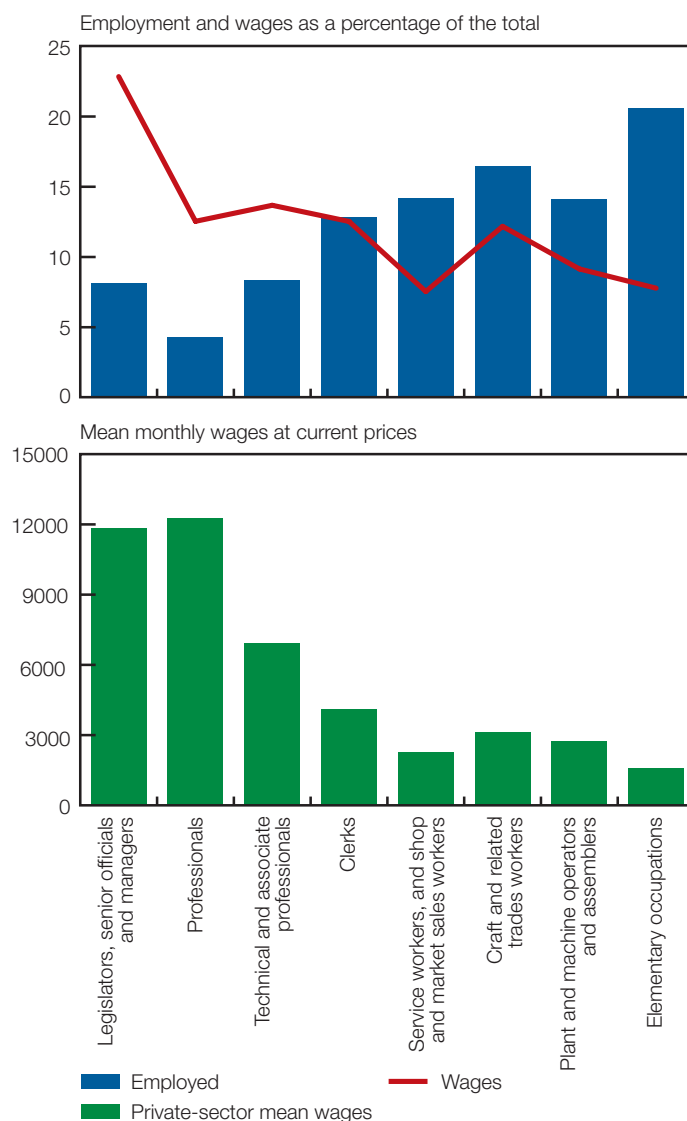
Source: Statistics South Africa, *Labour Force Survey*, September 2005, and own calculations

share of employees was in elementary occupations and the second largest share was that of craft and related trade workers at 16,5 per cent. Even though the category elementary occupations had the highest number of workers at 20,6 per cent in 2005, the largest share of total wages was paid to those employed as legislators, senior officials and managers. Professionals received the second-largest share of remuneration. The mean wage for workers in these occupations was also the highest compared to other industries.

The types of industries associated with technical and associate professionals were found to be financial intermediation, insurance, real-estate and business services as well as community, social and personal services. The difference between the share of wages and the share of employment seems much larger in private-sector service industries in South Africa than in the public sector.

According to the occupational breakdown represented in Figure 3.3, the largest occupational group in the public sector for 2005 was technical and associate professionals at 30,8 per cent. This category also received the largest part of wages at 30,5 per cent. The highest mean wage was earned by workers employed as legislators, senior officials and managers. The difference between the share of wages and the share of employed is much larger in the private sector than in the public sector, especially for legislators, senior officials and managers, and professionals. Legislators, senior officials and managers as well as professionals, according to the LFS, were mostly found to be employed in the community, social and personal services as well as the financial intermediation, insurance, real-estate and business services industry.

Within occupations it seems that wages are more equally distributed within the public sector than the private sector. The difference between the share of wages and the share of employment is larger in the private sector than in the public sector. In an economy where private-sector market forces are much more powerful, this is not unexpected.

Mean and median monthly wages for 2001, 2003 and 2005

Table 3.2 shows that the median monthly wage of R3 500 in the September 2001 LFS for the public sector was lower than the mean monthly wage of R4 068 (figure not shown). The same was true for the

Figure 3.3 Public-sector employment and wages by occupation, 2005
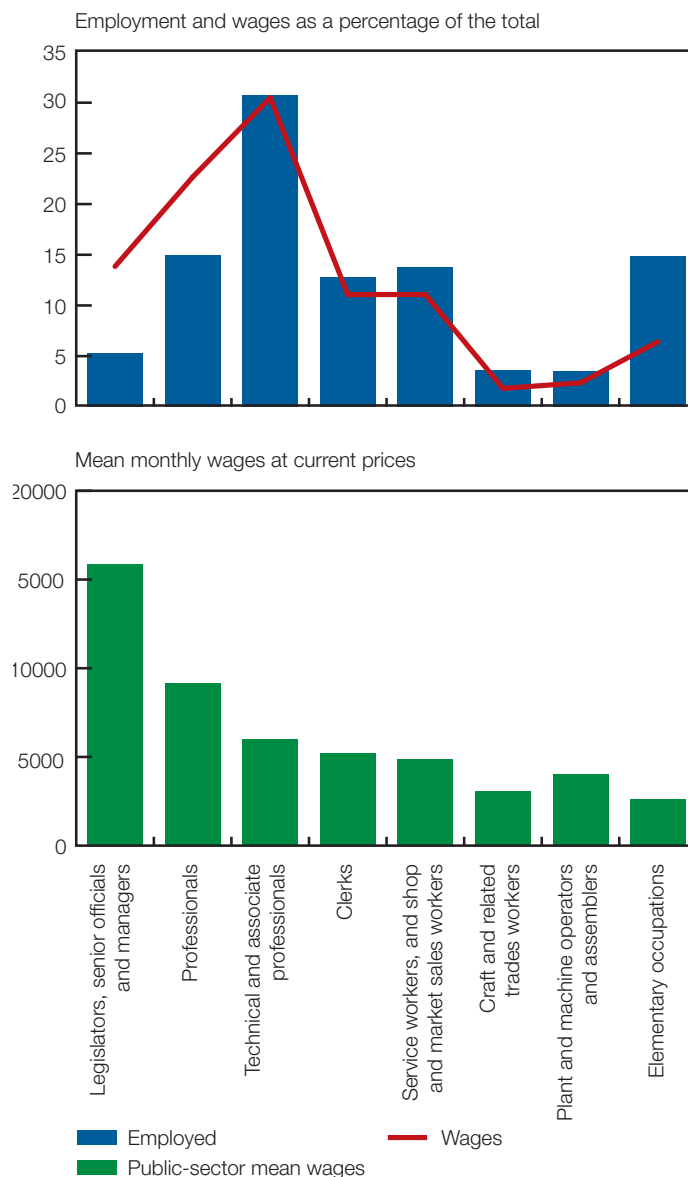
Employment and wages as a percentage of the total

Mean monthly wages at current prices

Employed — Wages
Public-sector mean wages

Source: Statistics South Africa, *Labour Force Survey*, September 2005, and own calculations

private sector where the median wage was R1 800 compared to the mean of R3 391. In the September 2005 LFS the median monthly wage for public-sector workers was substantially higher at R5 000 than it was for private-sector workers who earned around R2 000 per month. In real terms, public-sector median wages increased by 18 per cent between 2001 and 2005. In the private sector real median wages decreased by 3 per cent between 2001 and 2005.

According to the 2003 and 2005 LFS, the public sector employed approximately equal numbers of

Table 3.2 Monthly median wages for September 2001, 2003 and 2005
(Current and constant 2000 prices)

	2001 Current		2001 Constant		2003 Current		2003 Constant		2005 Current		2005 Constant	
	Public R	Private R	Public R	Private R	Public R	Private R	Public R	Private R	Public R	Private R	Public R	Private R
Total	3 500	1 800	3 311	1 703	4 500	2 000	3 686	1 638	5 000	2 000	3 906	1 563
Gender												
Male	3 482	1 900	3 294	1 798	4 200	2 000	3 440	1 638	4 500	2200	3516	1 719
Female......................................	3 500	1 680	3 311	1 589	4 500	2 000	3 686	1 638	5 000	2000	3906	1 563
Education												
No schooling	1 700	700	1 608	662	2 000	800	1 638	655	2 000	960	1 563	750
Some primary	1 700	1 000	1 608	946	2 000	1 000	1 638	819	2 500	1 200	1 953	938
Primary	1 600	1 200	1 514	1 135	2 300	1 100	1 884	901	2 000	1 400	1 563	1 094
Some secondary	2 000	1 500	1 892	1 419	2 600	1 500	2 129	1 229	2 500	1 600	1 953	1 250
Matric	3 500	2 600	3 311	2 460	4 100	3 000	3 358	2 457	4 500	3 000	3 516	2 344
Vocational	3 000	4 500	2 838	4 257	5 250	6 000	4 300	4 914	5 250	7 000	4 102	5 469
Diploma/certificate with less than Grade 12/Std10..........	4 000	4 000	3 784	3 784	5 250	4 000	4 300	3 276	5 250	4 000	4 102	3 125
Diploma/certificate with Grade 12/Std10.........................	4 500	5 000	4 257	4 730	5 250	5 250	4 300	4 300	5 300	5 250	4 141	4 102
Degree......................................	5 500	7 000	5 203	6 623	7 000	9 500	5 733	7 781	7 200	9 500	5 625	7 422
Postgraduate degree	5 600	9 500	5 298	8 988	7 000	10 500	5 733	8 600	10 000	13 500	7 813	10 547
Occupation												
Legislators, senior officials and managers	5 833	7 000	5 518	6 623	9 500	7 000	7 781	5 733	11 000	8 000	8 594	6 250
Professionals	5 600	8 000	5 298	7 569	7 000	9 500	5 733	7 781	7 000	9 500	5 469	7 422
Technical and associate professionals..............................	4 000	4 000	3 784	3 784	5 250	5 250	4 300	4 300	5 250	5 000	4 102	3 906
Clerks	3 100	2 800	2 933	2 649	4 000	3 000	3 276	2 457	4 000	3 000	3 125	2 344
Service workers, and shop and market sales workers...........	3 000	1 300	2 838	1 230	4 000	1 500	3 276	1 229	4 000	1 500	3 125	1 172
Skilled agricultural fishery workers.......................................	1 800	2 500	1 703	2 365	2 800	1 200	2 293	983	2 700	1 920	2 109	1 500
Craft and related trades workers.......................................	2 000	1 920	1 892	1 816	3 000	2 000	2 457	1 638	3 000	2 000	2 344	1 563
Plant and machine operators and assemblers	2 300	1 600	2 176	1 514	3 000	2 000	2 457	1 638	3 000	2 200	2 344	1 719
Elementary occupations.............	1 800	720	1 703	681	2 000	800	1 638	655	2 000	1 160	1 563	906
Union membership	4 000	2 000	3 784	1 892	5 000	2 500	4 095	2 048	5 250	3 000	4 102	2 344
No union membership	2 500	1 400	2 365	1 325	3 800	1 500	3 112	1 229	3 006	1 800	2 348	1 406

Source: Statistics South Africa, *Labour Force Survey*, September, and own calculations

males and females, whereas in the private sector, for every one female there were two males employed. When comparing the median wages for the total public and private formal sector, the LFS indicates that the public-sector median wage is much higher than its counterpart in the private sector. Interestingly, female median wages were higher in the public sector than they were for males. The opposite is true for the private sector where male median wages of R2 200 were higher than those of their female counterparts in 2005 at R2 000. This could be due to the different occupational composition of males and females in the different sectors.

As previously found in research on median wages[9] the private-sector median wages for workers with no schooling, or with less than Matric, are lower than the public-sector median wages of workers with the same qualifications. Formal-sector workers who have vocational studies were better remunerated in the private sector at a median wage of R7 000 per month than they were in the public sector, where they earned a median wage of R5 250 per month in 2005. The same is true for workers with a degree or a postgraduate degree. It is also noticeable that both public and private median wages for those with a postgraduate degree increased between 2003 and 2005.

9 *Woolard, I. 2002. A comparison of wage levels and wage inequality in the public and private sectors, 1995 and 2000. Working paper 02/62. Cape Town: Development Policy Research Unit.*

In 2005 the median wage of public-sector graduates without a postgraduate qualification was 3,6 times higher than the median wage of a public-sector worker with no education, which is a slight change from the 2003 ratio of 3,5. For the same group in the private sector, the median wage was 10,3 times more than that of a worker with no education, which was lower than in 2003 when the ratio was 11,9.

The highest median-paid occupations in both the private and public sectors were those of legislators, senior officials and managers; and professionals. This is true for both 2003 and 2005. Wages for legislators, senior officials and managers have increased substantially more in the public sector than they have in the private sector since 2001. The lowest median wages in the public and private sectors for 2001, 2003 and 2005 were in the elementary occupations category. The ratio of the median wage for more skilled (professionals) and less skilled (those in elementary occupations) for 2005 in the private sector was 8,2 and for the public sector 3,5. In 2003 these ratios were 8,8 and 4,8. It seems that once again the public-sector wage ratio between the highest and lowest skills group is much narrower than in the private sector. In the public sector, legislators and managers earned more than those in the private sector for both 2003 and 2005. Monthly median wages for this occupational group were R11 000 for the public sector and R8 000 for the private sector.

Multivariate estimation and comparison of the public and private-sector earnings function for 2005

In this section a lin-log model of wages is used to estimate wages for the public and the private sector using the September 2005 LFS data. The wage equation relates the logarithm of monthly wages to a set of individual characteristics. Separate models are then run for specific groups.

The earnings functions were specified as follows:

Ln(monthly wages) $= \beta_0 + \beta_1$(gender) $+ \beta_2$(population group) $+ \beta_3$(experience) $+ \beta_4$(experience^2) $+ \beta_5$(region) $+ \beta_6$(education) $+ \beta_7$(occupation) $+ \beta_8$(industry) $+ \beta_9$(public sector)

The dependent variable is the logarithm of monthly wages. β_0 is the intercept. Dummy variables were

implemented for explanatory variables except for the experience and experience (squared) proxy, which are continuous variables. Experience, or more accurately potential experience, is calculated as age less the expected age at which the worker should have completed his/her education. The number of years of schooling is derived from the LFS question on highest level of education attained. Experience squared allows for marginal returns to experience over the average working life, in line with human capital theory. Based on this, the coefficient of potential experience is expected to be positive and the coefficient of experience squared to be negative[10].

The wage equation was first estimated for "All" formal-sector workers and includes public and private-sector workers, as well as all population groups and males and females both. Secondly, the equation was estimated separately for the public and private sector to show whether the effect of different characteristics differs between the two sectors. Thirdly, the wage equation was run for males and females, and lastly for the two largest of the four population groups, African and White. Ordinary Least Squares was used to estimate the equation. Statistics South Africa's weights were used in estimating the equation.

Public-sector wage premiums for 2005

The equation results for "All" using September 2005 LFS data show that the explanatory power of the equation was 54,8 per cent (see Table 3.3). According to the model, public-sector wages are higher than private-sector wages, controlling for other factors. In 2005 working in the public sector multiplied workers earnings with $e^{0,299}$ which translates into a 35-per-cent premium, i.e. that public-sector workers earn approximately 35 per cent more than private-sector employees after controlling for other characteristics.

When comparing earnings for the two equations, African and White, Africans employed in the public sector earn 32 per cent more than they would have in the private sector. Whites in the public sector earn 28 per cent more than they would have been earning if they were employed in the private sector.

When the equation was run separately for males and females for 2005, it was found that the public-sector wage premia for males and females were very close to each other, being 33,1 per cent and 34,1 per cent, respectively[11].

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10 Erichsen, G, and Wakeford, J. 2001. *Racial wage discrimination in SA before and after the first democratic election*. Working Paper 01/49. Cape Town: Development Policy Research Unit.

11 It might seem inconsistent that the coefficients, even though they are close for males and females, are smaller than the coefficient for the equation "All"; this is, however, not the case and can be explained by imperfect model specification.

Table 3.3   Various regression results of the earnings equation for 2005

Dependent variable = log of monthly earnings

Explanatory variables	Coefficients						
	All	Public	Private	African	White	Male	Female
Constant	5,988	6,840	5,988	5,902	6,038	5,977	5,666
Private				Reference			
Public...	0,299			0,278	0,247	0,286	0,294
Male				Reference			
Female	-0,317	-0,234	-0,314	-0,247	-0,341		
Experience	0,033	0,018	0,035	0,024	0,062	0,037	0,025
Experience² (x1 000)*.............................	-0,446	-0,228	-0,492	-0,206	-1,220	-0,512	-0,328
African				Reference			
Coloured	0,191	0,179	0,199			0,206	0,124
Indian	0,403	0,195	0,447			0,638	-0,041
White...	0,421	0,278	0,440			0,490	0,331
Non-member: Trade union				Reference			
Member: Trade union	0,166	0,274	0,141	0,238	-0,153	0,135	0,248
No schooling				Reference			
Some primary..	-0,041	0,108	-0,075	0,083	0,551	-0,117	0,196
Primary..	0,082	-0,112	0,085	0,201	0,134	-0,021	0,451
Some secondary	0,184	0,074	0,189	0,291	0,331	0,078	0,474
Matric..	0,652	0,663	0,615	0,654	0,916	0,604	0,798
Vocational	1,036	0,963	0,997	0,802	1,298	0,950	1,012
Diploma/certificate with less than Grade 12/Std10	0,794	0,781	0,762	0,858	1,187	0,656	0,977
Diploma/certificate with Grade 12/Std10	0,858	0,774	0,859	1,121	0,933	0,777	1,019
Degree	1,11	1,036	1,123	1,545	1,102	1,029	1,247
Postgraduate degree.............................	1,513	1,781	1,349	2,065	1,519	1,559	1,567
Agriculture				Reference			
Mining and quarrying.............................	1,038	0,232	1,038	0,866	1,574	1,042	0,993
Manufacturing	0,582	-0,284	0,557	0,538	0,785	0,568	0,568
Electricity, gas and water supply	0,635	0,251	0,583	0,640	0,663	0,686	0,431
Construction	0,316	-0,483	0,292	0,300	0,458	0,334	0,193
Wholesale and retail trade	0,259	0,102	0,237	0,209	0,237	0,290	0,125
Transport, storage and communication..	0,675	0,28	0,617	0,513	1,103	0,639	0,701
Financial intermediation, insurance, real-estate and business services...........	0,649	0,311	0,614	0,456	0,887	0,638	0,642
Community, social and personal services	0,345	0,126	0,267	0,270	0,566	0,362	0,305
Elementary occupations				Reference			
Legislators, senior officials and managers..	1,002	0,743	1,048	0,971	1,062	0,934	1,078
Professionals...	0,743	0,389	0,853	0,762	0,795	0,84	0,603
Technical and associate professionals....	0,619	0,314	0,733	0,480	0,765	0,653	0,566
Clerks..	0,394	0,327	0,414	0,412	0,303	0,468	0,379
Service workers, and shop and market sales workers	0,039	0,147	0,017	0,125	0,075	-0,007	0,142
Skilled agricultural fishery workers	1,057	0,321	1,118	0,461	1,923	1,184	0,533
Craft and related trades workers	0,258	0,158	0,284	0,121	0,746	0,316	-0,061
Plant and machine operators and assemblers...	0,227	0,550	0,241	0,197	0,580	0,262	0,179
R²	0,548	0,532	0,547	0,572	0,458	0,598	0,485

*   For interpretation purposes, the coefficient of experience² was multiplied by 1 000

Source: Statistics South Africa, *Labour Force Survey*, September 2005, and own calculations. For all calculations, coefficients were significant at the 5-per-cent significance level except for the equation for Africans where the coefficient for Mpumalanga Province was insignificant (see Annexe 3.1). Provincial coefficients are not shown.

Effects of other characteristics on wages for "All" for 2005

Overall, when estimating the "All" equation for 2005 higher education played a very important role in determining wages for employed people. Specific educational levels that played an important role were a vocational education, a degree and a postgraduate degree. Within occupations, being a manager or being within a technical and associate professional occupation had a more positive impact on employees' wages than being in an elementary occupation, even after controlling for education and other characteristics.

Effects of other characteristics on wages for males and females for 2005

The explanatory power of the equation for males is 60 per cent, and for females 49 per cent. The regression results showed that primary education contributed more towards wages for females than it did for males. Interestingly, it is found that a vocational qualification is more important for higher wages for females than it is for their male counterparts.

The result from the estimations indicated that for female wages it is more important to be in a managerial occupation than it was for male wages. Experience was found to be more important for males than it was for females in terms of wages earned. Being an Indian male increased the chances of earning higher wages when compared to other population groups, while controlling for other characteristics. Female Indian workers earned less than other female population groups, again when controlling for other characteristics. It was also found that in terms of wages it was more important for females to belong to a union than it was for males.

Effects of characteristics on wages for the public and private sector for 2005

The explanatory power for the public-sector equation is 53 per cent, and for the private-sector equation 55 per cent. The negative coefficient for females indicated that females earned less than their male counterparts in both the public and the private sector, after controlling for other characteristics. Whites and Indians earned more than Africans, especially in the private sector, again after controlling for other characteristics.

People with some primary education in the private sector and primary education in the public sector were worse off than those who had no schooling in both the private and the public sector, respectively, after controlling for other characteristics. Wages were more positively affected in both the private and the public sectors as workers' education levels increased after primary education. As would be expected, the wage premium of a person with a postgraduate degree was the largest among all education variables in both the public and the private sector, and the strength of the relationship was stronger within the public sector. In both the public and private sector, having a vocational qualification contributed more towards wages than having a diploma with and/or without a Matric certificate.

Being in the mining industry was much more important for wages than being in any of the other industries in the private sector. Other than mining, it was noticeable that private-sector workers needed to be in a specialist field such as transport or the financial services sector to earn higher wages.

Wages were to a great extent influenced by occupations such as professionals where more specialised skills are required. Although legislators, managers and senior officials had a relatively larger coefficient above elementary occupations, managers are not classified as skilled by the *South African Standard Classification of Occupations* definition. Being in the skilled agricultural and fishery occupation had a larger positive impact on wages than in any of the other occupations.

Conclusion

The first part of the paper showed the extent to which workers' pay in the public and private sectors differed. The difference between the share of wages and the share of employment is larger in the private sector than in the public sector, specifically in occupations such as legislators and professionals. These wage differences could be the results of union activity and increases in wages for certain skills in specific occupations. The second and third parts have shown that the wages for workers with a postgraduate qualification are much larger in the private sector than in the public sector. The public sector, being the policy formulator and exemplar, has moved faster to ensure equity in terms of gender and population group than the private sector. The challenge for government is to support the private sector in implementing equity policies. In general, workers in intermediate and higher skilled occupations are more highly rewarded in both the public and the private sectors. Interestingly, the wages for vocational studies are higher in the private sector. This could be due to a larger demand for workers who are vocationally qualified.

Annexe 3.1 T-statistics of earnings equation

Dependent variable = log of monthly earnings

Explanatory variables	T-statistics						
	All	Public	Private	African	White	Male	Female
Constant..	2 468,8	6 96,4	2 215,4	2 498,3	414,6	2 122,7	1 097,8
Private				Reference			
Public	271,8			221,6	95,6	196,0	170,1
Male				Reference			
Female..	-497,4	-202,2	-424,9	-352,3	-213,2		
Experience...	360,6	87,0	346,5	237,4	244,2	334,4	150,3
Experience²	-241,7	-54,4	-238,8	-109,2	-223,8	-237,3	-90,8
African				Reference			
Coloured...	173,0	75,1	161,6			148,9	67,4
Indian...	300,9	59,1	301,4			397,7	-17,1
White	565,6	194,1	507,7			520,2	265,1
Non union				Reference			
Union	257,1	220,3	188,9	340,3	-87,1	174,9	215,7
No schooling				Reference			
Some primary	-22,8	23,0	-38,5	51,8	26,2	-60,8	44,5
Primary	39,3	-20,6	37,6	106,7	4,7	-9,4	94,1
Some secondary..................................	108,4	16,0	102,6	182,6	26,6	42,1	118,6
Matric	368,1	138,2	320,5	381,6	74,6	312,2	193,4
Vocational	346,1	118,4	307,9	194,1	100,5	304,2	112,2
Diploma/certificate with less than Grade 12/Std10	298,9	135,9	250,4	294,5	92,2	207,2	184,9
Diploma/certificate with Grade 12/Std10	439,3	155,5	398,0	551,0	75,9	347,7	234,7
Degree..	516,5	197,3	464,3	613,7	88,9	420,8	267,4
Postgraduate degree	649,7	344,8	490,4	718,4	122,3	561,6	329,6
Agriculture				Reference			
Mining and quarrying	537,3	9,1	511,5	499,9	197,9	512,5	148,1
Manufacturing......................................	354,8	-28,5	321,9	350,1	123,8	308,7	159,9
Electricity, gas and water supply	211,6	23,6	178,0	223,0	69,4	205,7	67,1
Construction	173,7	-49,7	151,6	177,9	65,6	169,9	36,5
Wholesale and retail trade.....................	158,7	10,0	137,5	136,2	37,8	157,4	35,5
Transport, storage and communication	364,9	28,9	314,3	287,2	163,8	312,6	168,9
Financial intermediation, insurance, real-estate and business services	387,5	34,5	344,6	282,3	142,0	331,0	181,1
Community, social and personal services	191,0	14,5	134,4	152,0	89,5	168,2	83,3
Elementary occupations				Reference			
Legislators, senior officials and managers.	755,9	255,4	707,9	515,7	242,9	597,0	434,5
Professionals	488,6	142,7	465,4	394,4	171,9	449,8	231,9
Technical and associate professionals......	509,9	134,2	514,5	344,2	172,7	426,6	278,2
Clerks	339,8	130,3	317,3	320,9	68,0	283,3	205,2
Service workers, and shop and market sales workers.......................................	35,8	60,2	13,7	120,6	15,6	-5,5	71,7
Skilled agricultural fishery workers..........	256,0	33,5	245,0	101,7	200,2	261,0	59,3
Craft and related trades workers............	243,4	48,7	247,3	119,7	152,1	271,5	-23,6
Plant and machine operators and assemblers	205,5	146,6	201,6	191,0	103,3	219,3	58,9
Eastern Cape				Reference			
Western Cape.......................................	212,6	72,3	176,8	204,5	68,7	163,9	140,0
Northern Cape......................................	-6,9	-26,1	-3,3	37,1	-17,2	-3,3	-5,4
Free State..	-64,3	25,9	-79,2	-36,4	-12,1	-38,4	-47,5
KwaZulu-Natal	-127,2	-60,1	-106,8	49,7	-135,4	-110,8	-39,7
North West	35,1	73,5	13,2	60,2	-14,4	20,6	41,8
Gauteng..	202,3	109,9	166,4	259,1	45,9	150,4	143,9
Mpumalanga...	-71,2	-49,9	-62,0	0,9	-99,2	-35,2	-61,5
Limpopo	-34,4	-14,4	-34,5	-4,4	-9,5	-12,6	-24,8
R²	0,548	0,532	0,547	0,572	0,458	0,598	0,485

Source: Statistics South Africa, *Labour Force Survey*, September 2005 (own calculations at the 95-per-cent confidence level)

Selected labour market indicators, 2000 – 2005

	2000	2001	2002	2003	2004	2005
Size of the working age population (15-65)	**27 807 00**	**28 117 000**	**28 527 000**	**28 938 000**	**29 305 000**	**29 697 000**
Gender (per cent)						
Male	48,5	48,4	48,7	48,4	48,4	48,1
Female..	51,5	51,6	51,2	51,6	51,5	51,8
Education (per cent)						
No schooling	7,7	7,6	7,1	6,7	6,8	6,4
Primary..	27,1	26,7	25,0	24,1	23,0	21,5
Secondary	54,5	55,8	57,7	59,5	60,7	62,0
Tertiary..	9,9	9,0	9,4	9,2	8,7	9,4
Age (per cent)						
15-25	36,4	36,1	35,7	35,4	35,3	35,2
26-35	25,1	25,2	25,5	26,2	26,2	26,1
36-45	18	17,9	17,7	17,5	17,2	17,3
46-55	12,1	12,3	12,6	12,4	12,6	12,6
56-65	8,4	8,5	8,5	8,5	8,7	8,8
Economically active population	**16 400 000**	**15 836 000**	**16 232 000**	**15 858 000**	**15 778 000**	**16 788 000**
Gender (per cent)						
Male	54,4	54,8	55,0	55,4	55,8	54,3
Female..	45,6	45,2	45,0	44,6	44,2	45,7
Education (per cent)						
No schooling	7,1	6,1	6,0	5,0	5,2	5,0
Primary..	25,6	23,9	22,4	21,1	20,0	19,3
Secondary	52,0	55,4	56,5	58,8	60,1	60,9
Tertiary..	14,3	13,6	15,1	14,5	13,8	14,1
Age (per cent)						
15-25	21,9	21,8	21,8	21,0	20,6	21,1
26-35	32,9	33,9	34,2	35,3	35,1	35,0
36-45	24,3	24,3	23,9	23,7	23,3	23,1
46-55	14,5	14,4	14,6	14,5	15,2	14,9
56-65	6,4	5,6	5,5	5,5	5,8	5,8
Employed	**12 239 000**	**11 181 000**	**11 297 000**	**11 424 000**	**11 643 000**	**12 301 000**
Formal sector (total)	7 861 000	7 793 000	8 034 000	8 206 000	8 318 000	8 566 000
Gender (per cent)						
Male	64,3	63,7	64,4	63,6	62,4	62,6
Female..	35,7	36,3	35,5	36,4	36,5	36,7
Education (per cent)						
No schooling	4,9	4,3	4,4	3,7	3,5	3,2
Primary..	18,4	17,6	16,5	15,2	14,4	13,7
Secondary	51,1	54,3	54,2	56,7	58,3	58,8
Tertiary..	25,5	22,5	24,8	23,7	22,7	23,6
Age (per cent)						
15-25	14,3	14,4	13,9	13,1	13,5	13,8
26-35	34,4	34,7	35,2	37,0	36,1	36,3
36-45	28,1	28,3	27,7	27,3	26,7	26,5
46-55	16,6	16,8	17,2	16,6	17,3	17,1
56-65	6,6	5,8	6,0	6,0	6,4	6,4
Occupation (per cent)						
Legislators, officials and managers	6,3	7,5	8,3	8,9	9,9	8,7
Professionals	6,9	5,9	6,0	6,3	5,4	6,6
Technical and associate professionals	13,0	13,8	14,0	13,1	13,0	12,7
Clerks	12,6	13,5	13,4	13,7	13,7	13,4
Service workers, and shop and						
market sales workers..	13,0	13,0	11,5	12,8	13,5	13,8
Skilled agricultural and fishery workers	2,7	2,0	2,2	1,0	0,6	0,9
Craft and related trades workers	13,0	12,7	12,4	12,1	12,1	13,7
Plant and machine operators and assemblers.....	13,3	12,9	13,0	12,5	12,1	11,6
Elementary occupations	18,8	18,4	19,1	19,5	19,6	18,6
Industry (per cent)						
Agriculture, fishing and forestry........................	9,8	9,8	10,6	10,1	7,5	6,8
Mining and quarrying	7,5	7,1	6,9	6,7	4,9	4,8
Manufacturing...	16,7	17,9	17,9	16,5	17,9	16,8
Electricity, gas and water supply	1,2	1,2	1,0	1,1	1,2	1,1
Construction..	4,7	4,3	4,5	4,8	5,9	6,8
Wholesale and retail trade.................................	18,3	18,4	16,8	18,5	19,8	21,1
Transport, storage and communication.............	5,8	5,5	5,8	5,0	5,3	5,3
Financial intermediation, insurance, real-estate						
and business services.......................................	11,5	12,2	12,5	12,5	13,0	14,2
Community, social and personal services,						
private households and exterior organisations ..	23,9	23,4	23,4	24,5	24,3	23,2

	2000	2001	2002	2003	2004	2005
Informal sector (total)	3 108 000	2 350 000	2 331 000	2 269 000	2 372 000	2 801 000
Gender (per cent)						
Male	52,7	57,3	57,3	57,9	60,5	55,6
Female...	47,3	42,7	42,7	42,1	39,5	43,5
Education (per cent)						
No schooling	13,5	12,2	12,5	10,3	11,7	11,0
Primary	37,8	35,8	33,8	33,7	32,5	31,0
Secondary	43,8	46,5	48,3	51,1	50,3	53,0
Tertiary..	4,1	4,4	3,9	4,9	4,2	4,2
Age (per cent)						
15-25	21,7	18,5	17,4	16,5	17,4	17,6
26-35	27,0	28,0	29,7	31,0	30,4	30,6
36-45	22,7	24,8	24,8	23,9	24,0	23,3
46-55	17,1	17,9	17,3	18,7	18,4	18,6
56-65	11,5	10,8	10,8	9,9	9,9	9,9
Occupation (per cent)						
Legislators, senior officials and managers	2,2	3,0	2,8	3,9	3,6	3,7
Professionals	0,6	0,9	0,8	1,0	0,5	0,8
Technical and associate professionals	3,0	4,0	3,4	3,8	2,8	3,8
Clerks	1,5	1,4	3,8	1,3	1,1	1,5
Service workers, and shop and market sales workers.............	12,7	16,7	13,2	13,4	13,7	14,9
Skilled agricultural and fishery workers	30,6	15,2	22,7	11,4	11,5	8,0
Craft and related trades workers	16,4	21,4	19,4	20,0	21,6	20,2
Plant and machine operators and assemblers ..	4,7	4,5	4,4	4,8	4,2	0,4
Elementary occupations	28,4	32,9	31,8	40,4	41,0	42,7
Industry (per cent)						
Agriculture, fishing and forestry........................	34,6	16,3	23,6	16,1	17,9	12,1
Mining and quarrying	0,3	0,1	0,2	0,1	0,0	0,1
Manufacturing..	7,6	8,7	8,0	8,6	9,3	9,1
Electricity, gas and water supply	0,1	0,1	0,0	0,1	0,0	0,1
Construction	8,8	11,7	10,0	11,7	13,4	12,4
Wholesale and retail trade..............................	31,6	42,1	35,2	39,7	37,2	43,0
Transport, storage and communication.............	3,4	4,5	4,3	5,4	5,1	5,5
Financial intermediation, insurance, real-estate and business services....................................	1,6	3,3	3,4	3,0	2,5	2,6
Community, social and personal services, private households, and exterior organisations .	11,6	13,1	15,0	15,1	14,5	15,1
Unemployed (total)	4 162 000	4 655 000	4 935 000	4 434 000	4 135 000	4 487 000
Unemployment rate	25,4	29,4	30,4	28,0	26,2	26,7
Gender (per cent)						
Male	22,2	25,8	25,9	24,7	23,1	22,6
Female...	29,2	33,8	35,9	32,0	30,2	31,7
Education (per cent)						
No schooling	17,0	21,2	19,5	17,9	14,8	18,0
Primary	24,4	29,4	31,2	28,1	26,0	26,7
Secondary	31,2	34,7	36,0	33,1	31,6	31,6
Tertiary..	11,6	12,6	12,6	10,6	8,4	9,1
Age (per cent)						
15-25	45,4	51,5	53,9	53,2	49,7	50,2
26-35	27,9	32,2	32,3	28,9	27,8	27,8
36-45	16,9	19,3	20,4	17,9	17,3	18,0
46-55	12,0	13,9	15,3	13,1	11,9	11,8
56-65	6,4	10,1	9,4	8,0	6,5	7,8
Indicators						
Self employed as a percentage of employed	*	16,5	14,1	12,4	14,6	14,9
Percentage of the economically active population who are unemployed for 6 months to 1 year	*	3,4	3,6	3,4	3,0	3,5
Percentage of the economically active population who are unemployed for 1 year or longer	*	19,1	20,0	17,5	16,3	16,0
Percentage of the working age (15-65) not economically active...	41,0	43,7	43,1	45,2	46,2	43,5
Total population size	44 874 000	45 134 000	45 612 200	45 612 000	46 545 000	46 972 000

*   Data not available

Source: Statistics South Africa, Labour Force Survey, September 2005, and own calculations