AN ANALYSIS OF THE EXTENT, NATURE AND CONSEQUENCES OF FEMALE PART-TIME EMPLOYMENT IN POST-APARTHEID SOUTH AFRICA

By

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Declaration

I, Colette Muller, declare that:

(i) Except where otherwise indicated, the research reported in this thesis is my original research.

(ii) This thesis has not been submitted for any degree or examination at any other university.

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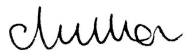

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Abstract

International studies of part-time employment have shown that most part-time workers are women, and specifically married women (Rosenfeld and Birkelund 1995; Caputo and Cianni 2001). The ability to work part-time enables women who have household commitments, such as caring for children, to maintain an attachment to the labour force and to preserve job skills while also undertaking household labour (Long and Jones 1981; Rosenfeld and Birkelund 1995). In many countries, therefore, the growth in part-time employment has constituted an important component of the increase in women's work. However, part-time jobs are often considered to be poorly remunerated, offering little or no security, limited opportunities for career advancement and few (if any) benefits (Rosenfeld and Birkelund 1995; Rodgers 2004; Hirsch 2005; Bardasi and Gornick 2008).

Although empirical research on South Africa's labour markets has expanded significantly over the post-apartheid period, particularly with the introduction of nationally representative household surveys that capture individual employment data, little is known about the characteristics of South African part-time workers, or about the nature of the work these individuals perform. Using data from a selection of South Africa's nationally representative household surveys, namely the October Household Surveys, the Labour Force Surveys and the Labour Force Survey Panel, this thesis aims to redress this lacuna.

The thesis comprises four empirical chapters. The first chapter outlines the definition of part-time employment adopted throughout the study, and it presents gendered trends in part-time employment in South Africa from 1995 to 2006. The descriptive analysis shows that most part-time workers in South Africa are women, and further, that the growth in female part-time employment has been an important part of the feminisation of the labour force in South Africa. The second chapter compares part-time and full-time wage (salaried) employment. The main analytical question addressed in this chapter is whether women are penalised for working part-time. Although hourly wages in part-time employment are, on average, lower than in full-time employment, the study demonstrates that after controlling for differences in observable and unobservable characteristics, women in part-time employment receive a wage premium. The third chapter explores heterogeneity *among* part-time wage workers, distinguishing between women who choose to work part-time and women who report wanting to work longer hours. Key findings of this chapter are that a wage premium persists for women both in voluntary and in involuntary part-time work; but that involuntary part-time workers have a stronger labour force attachment than voluntary part-time workers. The fourth chapter uses the distinction between part-time and full-time employment to investigate changes in the gender wage gap in employment. The results show that the total gender gap in wages among part-time and full-time workers has fallen over the years, with the greatest reduction visible for those working part-time. The final chapter summarises the main findings of the thesis and it outlines avenues for further research on part-time employment in South Africa.

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Chapter 1

Introduction

Recent studies of the South African labour market have identified a number of key changes that have occurred in the post-apartheid period. These include a dramatic increase in labour force participation during the first decade of democracy, particularly among women (Casale and Posel 2002; Casale 2003), growth in employment that has been significantly lower than the increase in labour supply (among both men and women) (Bhorat 2004; Casale, Muller and Posel 2004) and as a consequence, rising rates of unemployment from an already high base (Klasen and Woolard 1999; Casale and Posel 2002; Kingdon and Knight 2004; Banerjee *et al* 2008).

This thesis extends the existing research on labour markets in South Africa by examining the nature of employment more closely. Of particular interest are those individuals who work part-time. The international labour market literature has shown that part-time work is an important component of the feminisation of the labour force and the associated growth in women's employment in many countries (Long and Jones 1981; Rosenfeld and Birkelund 1995). Research in developed countries shows that part-time workers are typically married women with access to alternative income sources and benefits from their spouse's employment. Gwartney-Gibbs (1988) (cited in Rosenfeld and Birkelund 1995:111) suggests that working part-time allows a woman to "keep her hand in" while raising children, and perhaps makes it easier to return later to a full-time job.

Part-time work may offer more flexibility than is usually found in a full-time work schedule, not only to women with home responsibilities but also to individuals with schooling commitments or health considerations (Williams 1995:36). Older individuals may use part-time employment as a transition to retirement or to supplement pension

income (Williams 1995:36), while young individuals who are currently studying may prefer part-time work to full-time jobs.

Despite the apparent advantages of working part-time, part-time jobs typically "pay less in total and hourly income, provide less security and advancement opportunity, and give fewer benefits" (Rosenfeld and Birkelund 1995:111). Fagan and Rubery (1996:227) indicate further that "[p]art-time jobs are often variously described as flexible, low skilled, low paid, and precarious or insecure". It is also possible that while some individuals are content to work part-time, others do so involuntarily and would prefer employment that offers full-time working hours.

Although the literature exploring part-time employment in many countries, including the United States, Canada, Australia and Sweden, is well developed and continues to expand (Long and Jones 1981; Moskoff 1982; Rosenfeld and Birkelund 1995; Fagan and Rubery 1996; Barrett and Doiron 2001; Görg and Strobl 2003; Bardasi and Gornick 2008; Booth and Wood 2008; Buddelmeyer *et al* 2008; Manning and Petrongolo 2008), the nature and consequences of part-time work in South Africa have received little attention. This thesis aims to address this lacuna by exploring patterns and trends in part-time employment in post-apartheid South Africa. In particular, four key research objectives have been identified:

1. To investigate the extent of, and trends in, part-time employment in South Africa and to establish whether, and if so how, these differ by gender.
2. To compare part-time to full-time workers, and to identify whether and how earnings differ between these two groups.
3. To investigate differences among part-time workers (in terms of individual and occupational characteristics and earnings), according to whether part-time work is voluntary or involuntary.
4. To explore differences in the gender wage gap across the part-time and the full-time employed, and to identify whether this differential has widened or narrowed in post-apartheid South Africa.

In the next chapter I provide some context for the predominately analytical chapters that follow. First, the data sources which are analysed in the thesis are discussed. Second, the chapter motivates for and presents the definition of part-time employment that is adopted in the study, and discusses how the data available can be used to differentiate not only between part-time and full-time workers, but also among part-time workers (enabling a distinction between voluntary and involuntary part-time employment). Finally, this chapter addresses the first research objective by exploring whether part-time work in South Africa is predominantly women's work. By identifying trends in total and in part-time employment by gender from 1995 to 2006, the chapter investigates whether the documented feminisation of the labour force in South Africa coincides with an expansion in part-time employment among women. The chapter also utilises the distinction between voluntary and involuntary part-time workers to examine whether trends in underemployment (involuntary part-time employment) among women and men tracked changes in unemployment in South Africa over the same period.

Chapters 3, 4 and 5 constitute the main analytical body of the thesis and each chapter deals with a particular aspect of part-time employment. Chapter 3 focuses on the second research objective, identifying first the key factors that distinguish part-time and full-time workers (in terms of their individual and occupational characteristics). The chapter then investigates the extent of the wage gap between part-time and full-time workers and identifies how much of the wage differential between these groups can be explained by observable differences in the characteristics of workers and in the work that they do. The main empirical question addressed in this chapter is whether, as in many other countries, South African part-time workers (and women in particular) are penalised for working part-time.

Chapter 4 exploits the distinction between voluntary and involuntary part-time workers to investigate the third research objective. The chapter starts by investigating, in a univariate context, what characteristics distinguish female voluntary and involuntary part-time workers from each other and from women working full-time. Multivariate analysis is also

used to identify the key observable factors differentiating involuntary part-time workers from individuals who voluntarily work part-time. I then consider the implications of differentiating between voluntary and involuntary part-time workers for an analysis of earnings differentials between these groups and the full-time employed. Finally, the chapter compares the labour market attachment of voluntary and involuntary part-time workers.

In Chapter 5, I address the final research objective of the thesis. The chapter investigates trends in the gender wage gap and in gender discrimination among part-time and full-time workers in post apartheid South Africa. Specifically, the chapter considers how a) the magnitude of the gender wage gap and b) the factors contributing to this gap have changed from 1995 to 2006. Female-dominated occupations, such as domestic work, which have historically had little protection in the South African labour market, may be particularly affected by protective labour legislation introduced by the post-apartheid government over the period. Because these occupations are likely to be overrepresented in female part-time employment in South Africa, any decline in the gender wage gap may be more pronounced among those working part-time than among full-time workers.

In each of the analytical chapters, the focus is on wage (salaried) employment rather than on total employment, which would include the self-employed. There are three main reasons for this. First, the South African labour market has undergone numerous legislative changes over the period under consideration in this study, and these changes are more likely to have impacted upon the wages of employees than upon the earnings of self-employed workers. Second, a distinction between voluntary and involuntary part-time workers is more relevant to the wage employed (who may face exogenous constraints upon their working hours) than to the self-employed. Third, in order to investigate whether certain groups of workers (such as women) are treated differently by employers, much of the international literature on earnings differences between groups focuses specifically on wage employment.

To address the specific research objectives appropriate econometric techniques are applied in all three of the analytical chapters. Each chapter also highlights the shortcomings of the various methodologies utilised, either by adopting alternative strategies to address these (in the case of sample selection problems, for example) or by considering the implications of these shortcomings for the results.

Finally, Chapter 6 concludes the thesis by providing a summary of key findings and also makes some suggestions for future research.

Chapter 2

Data sources, definitions and trends in part-time employment

This chapter provides some context for the analytical chapters that follow, examining specifically the data sources utilised in the study and outlining the definitions of part-time employment and involuntary underemployment adopted in the thesis. Data from selected nationally representative household surveys are then used to explore the extent of part-time employment, and involuntary underemployment in the South African economy. Of particular interest is determining whether the documented feminisation of the labour force in South Africa (Casale and Posel 2002; Casale 2003) coincides with an expansion in part-time employment among women. In addition, the chapter investigates how involuntary part-time work among men and women has changed in relation to unemployment in South Africa.

2.1 Data Sources

In the early 1990s, South Africa's official data collection agency, Statistics South Africa (StatsSA), introduced detailed nationally representative household surveys. These surveys questioned respondents extensively on individual employment status and earnings, and the subsequent wealth of data made available has resulted in a significant increase in empirical research focusing on the state of the country's labour market in the post-apartheid period (cf. Standing *et al* 1996; Klasen and Woolard 1999; Bhorat *et al* 2001; Casale and Posel 2002; Casale *et al* 2004; Kingdon and Knight 2004; Muller and Esselaar 2004; Branson and Wittenberg 2007; Altman 2008; Banerjee *et al* 2008; Posel and Muller 2008).

This thesis draws on three key sources of South African nationally representative household survey data that have been used by researchers analysing issues on employment and wages, unemployment and labour force participation during the post-

apartheid period, namely the October Household Survey (OHS), the Labour Force Survey (LFS) and the Labour Force Survey Panel.

The OHS, which aimed to collect comprehensive information on individuals' labour market participation and wages and to capture information on South Africa's informal sector, was introduced by StatsSA in 1993 and was conducted annually thereafter until 1999. The OHS typically comprised a sample of approximately 30 000 households in 3 000 clusters, although there is some variation in sample size and in survey design over the years.[1] StatsSA replaced the OHS with the biannual LFS in 2000 and data were collected in March and September of each year up until March 2008.[2] Approximately 10 000 households were sampled in the pilot survey, while successive LFSs surveyed a larger sample of roughly 30 000 households in 3 000 clusters.

Through changes in the survey questionnaire, particularly in respect of questions relating to individual employment status, the LFS aimed to improve upon measures of employment and unemployment obtained using the OHSs and also to provide more comprehensive information on South Africa's informal sector. The initial employment activity question in the LFSs, for example, is more inclusive than in the OHSs, providing clear examples of the activities that should be counted as work, and stipulating that respondents should report as employment any work activities that were undertaken even

[1] The 1993 OHS cannot be compared with subsequent OHSs because the Bantustan states (Transkei, Bophuthatswana, Ciskei and Venda) were omitted from the sample. The sampling methodologies in 1993 and in 1994 were also different to those used in other rounds of the OHS. In addition, a smaller sample of households was used in 1996 and in 1998 (16 000 and 20 000 households respectively) in comparison to the other years (Muller and Posel 2004). See also Branson and Wittenberg 2007.

[2] In 2008 StatsSA introduced the Quarterly LFS (QLFS), which has since replaced the biannual LFS. Revisions made to the QLFS make comparability between the data obtained in these surveys and those of earlier surveys, including the LFS, difficult. A key problem for this thesis is that earnings information is not collected in each round of the QLFS. Rather, StatsSA has indicated that earnings questions (redesigned on the basis of comments made on the earnings questions in the LFS by representatives of the International Monetary Fund) will be included as a supplement to the QLFS once a year from 2010. For more information see StatsSA 2008.

for only one hour in the week prior to being interviewed (Muller and Posel 2004). These prompts, along with the inclusion of 'hurdle' questions that attempt to corroborate information obtained in other parts of the questionnaire and to reclassify individuals coded as either unemployed or economically inactive in the initial activity questions as working, increase the likelihood that individuals who are self-employed and who are involved in marginal work (which is likely to include part-time jobs) will be recorded as employed. The implication of these improvements, however, is that it is difficult to determine how much of a change in employment and unemployment estimates that coincides with the changeover from the OHSs to the LFSs is genuine or simply the consequence of changes in data capture (Muller and Posel 2004).

Notwithstanding this concern, data from the 1995 and 1999 OHSs, along with data from selected LFS cross sections, are used later in this chapter to investigate trends in employment in South Africa. Special mention is made of the implications of changes in data capture for the results presented. In addition, data from the September 2003 LFS are investigated to compare the characteristics of, and the average returns to, part-time and full-time employment in Chapter 3 and to explore descriptively the differences between voluntary and involuntary part-time workers and the full-time employed in Chapter 4. The 1995 and 1999 OHS, along with the September 2001 and 2006 LFSs, are also used in Chapter 5 when examining the gender wage gap among part-time and full-time South African workers. In Chapter 5, I draw further attention to problems of survey consistency and comparability across the LFSs and the OHSs and highlight the implications of these issues for the results.

Although the LFSs were released as cross-sectional data sets, they were designed as a rotating panel of dwellings with twenty percent of the sample being replaced after each wave. The national LFS Panel was released by StatsSA in 2007 and comprises information on individuals interviewed in six of the LFS waves from September 2001 to March 2004. In Chapters 3 and 4 of this thesis, data from the LFS Panel are used in the econometric analysis of earnings differences to address problems of endogeneity that may arise because of omitted variables in the estimation.

However, the LFS Panel has a number of limitations. First, the panel spans only three years, a relatively short period of time, and the twenty percent rotation of the sample means that individuals should not be in the panel for more than five waves.[3] Second, the tracking unit for the LFS Panel is the dwelling place, rather than the individual or the household. Consequently, individuals and/or households who moved dwelling were not matched over time (Casale and Posel 2007). This may be of concern in this thesis, particularly if there are differences in the mobility of part-time and full-time workers and if mobility is a function of earnings. Third, the unit of analysis in the LFS Panel released by StatsSA is the individual, and individuals have not been linked to their household members who remained co-resident over time. It is therefore not possible to create any household level variables in the LFS Panel. For example, it is impossible to identify the number of children in household, information which would be relevant not only for this thesis but also for other studies of labour market activity in South Africa. Fourth, StatsSA has not provided any weights in the LFS Panel, nor is there any clear way of calculating these weights. As Casale and Posel (2007) also note, it is not possible to obtain this information (or any other individual or household level information) by linking the individuals in the panel back to their data in the original LFSs as unique identifiers have been replaced.

Another concern, applicable to panel data more generally, is the issue of attrition. Attrition occurs when individuals or households are lost from the survey sample and may result from 'loss to follow-up' (if individuals are highly mobile, for example), refusal and death (Branson and Wittenberg 2007). Because the loss of individuals or households to the sample is often not random, the resultant sample may be unrepresentative of the population. In both Chapters 3 and 4, I investigate how representative the cross-sectional waves of the panel are by comparing the results obtained using these data with those

[3] According to StatsSA (2006) poor data management and a lack of methodological documentation meant that no record was kept of how the rotational scheme was applied or how many dwelling units were actually rotated. StatsSA suspect that no rotation occurred between the second and third waves of the panel and acknowledge that the final twenty percent of the original dwelling units were visited by enumerators in the last wave of the LFS Panel. As a result, some individuals may be in the panel for more than five waves.

estimated using a data set constructed by pooling the original September 2001 to March 2004 LFS cross-sections (data which should not be affected by the problem of attrition or by the problem of sampling on the dwelling place). The pooled LFS cross-sections are also used in the econometric analyses of earnings differentials in both Chapters 3 and 4, and in the multivariate analysis of the correlates of voluntary and involuntary part-time work in Chapter 4.

2.2 Defining part-time employment and involuntary underemployment

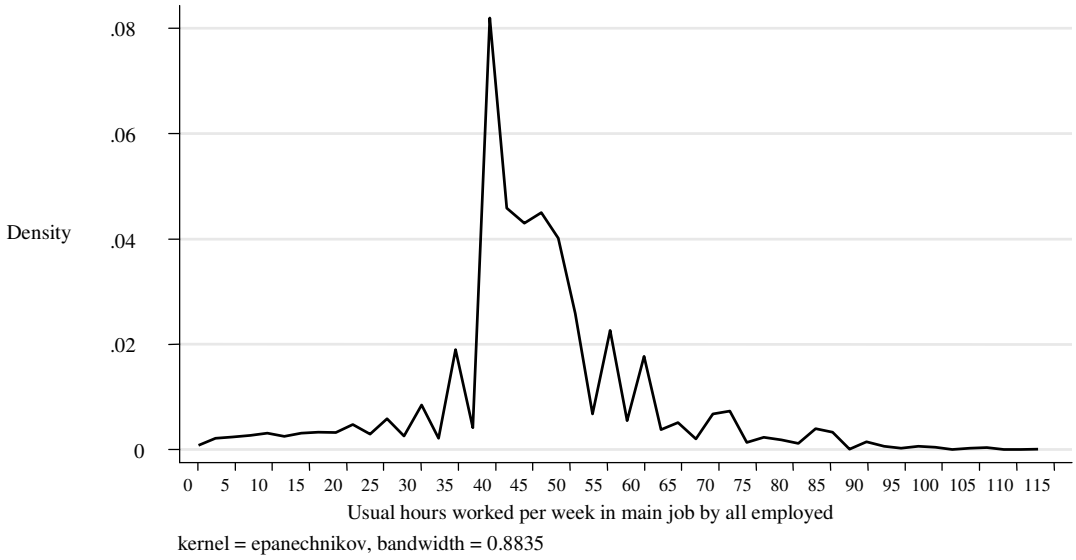
South Africa appears to have no formal (statistical or statutory) definition of part-time employment, and StatsSA has adopted different working-hour thresholds to identify part-time workers in different surveys. In StatsSA's Survey of Total Employment and Earnings (STEE), for example, part-time employment is defined as normally working "less than 35 hours per week" while in the Quarterly Employment Statistics (which replaced the STEE in November 2005) part-time employees are defined as "those … who usually work less than 40 hours per week" (Posel and Muller 2008). Across countries, the definition of part-time work adopted in surveys also differs, but the convention seems to be fewer than 35 or thirty hours a week. Most surveys in the United States define part-time workers as those who usually work less than 35 hours a week (Hirsch 2005; Hardoy and Schøne 2006), while surveys in the United Kingdom and in Canada typically use thirty hours as the cut-off. Rather than imposing a fixed threshold to define part-time employment, some surveys favour asking respondents to identify directly whether an individual's employment is full-time or part-time, and studies may adopt this 'self-definition' of part-time work (c.f. Bardasi and Gornick 2008).

In the surveys utilised in this thesis, respondents are not asked to self-identify whether they consider their employment to be part-time or full-time. However, the surveys regularly ask individuals to report the number of hours actually worked in their main job in the week prior to being interviewed, along with the number of hours usually worked.[4] To make the findings of this thesis comparable to those from other studies, I distinguish

[4] An exception is in the 1995 OHS where respondents are only asked to report actual working hours.

individuals who work full-time from those who work part-time based on the number of weekly hours individuals usually work in their main job, specifically using 35 hours a week as the threshold identifying full-time work. Using data from the September 2003 LFS, Figure 1.1 shows the kernel density plot of usual working hours among the employed. The large spike in hours worked at forty hours and the slightly smaller one at 35 hours suggests that the 35-hour threshold distinguishing individuals who work part-time from those working full-time is reasonable.[5] Where appropriate, however, the robustness of the results to alternative hourly thresholds defining part-time and full-time work is explored.

Figure 1.1. Kernel density plot of usual working hours among the employed, 2003.



Source: September 2003 LFS.

At the Sixteenth International Conference of Labour Statisticians (ICLS) a resolution regarding the definition of 'time-related underemployment' was adopted (ILO 1998).[6] In

[5] Kernel density plots showing similar spikes in working hours are also obtained when using data from the 1995 and 1999 OHSs and from the various September rounds of the LFS.

[6] Underemployment usually also includes issues such as the underutilisation of individuals' skills or qualifications as well as earnings and income adequacy. Measuring and analysing these additional aspects of underemployment is problematic, however, as the necessary data are often difficult to come by (OECD

particular, the ICLS recommends that the underemployed be identified as individuals who are a) willing to work additional hours; b) available to work additional hours and c) work less than an hourly threshold during the reference period. In this thesis I adopt a definition of involuntary underemployment that is broadly consistent with the ICLS recommendations, identifying the involuntarily underemployed as part-time workers who are willing to work longer hours (satisfying parts a) and c) of the ICLS recommendations).

It is important to note that the first recommendation from the ICLS for defining underemployment does not require an individual's willingness to work more to be determined by any objective criterion (such as active job search, for instance). In this thesis, an individual's willingness to work more is determined solely by their expressed desire to work longer hours. This is necessary for comparability purposes – respondents were not asked to report on whether individuals desiring longer hours had searched for additional work in either the 1995 or 1999 OHS, and although this information was captured in the cross-sectional LFSs, StatsSA failed to release these data in the LFS Panel. Furthermore, incorporating active job search into the definition of involuntary part-time employment would significantly reduce the sample of involuntary part-time workers. On average, only 43 percent of the individuals who were willing to work longer hours in the 2000 to 2006 September LFSs actively sought additional hours. Incorporating the second ICLS recommendation regarding an individual's availability to work more hours into the definition of involuntary part-time work in South Africa is also problematic. Although South Africa's national household surveys have regularly asked respondents to report whether or not the individual would like to work additional hours, they have not consistently asked whether individuals who report wanting longer hours would be available to work extra hours (such a question is omitted from the 1995 and 1999 OHSs). In addition, although respondents are asked to report whether individuals

1990:179). The South African national household surveys, for instance, do not capture the information necessary to quantify these issues. In addition, the ICLS notes that the statistical concepts required to describe these additional situations of underemployment are currently underdeveloped and makes no recommendations on how to define them (ILO 1998:2).

would be able to start additional work within four weeks of being interviewed in each of the cross-sectional LFSs, StatsSA failed to release the data pertaining to these questions in the LFS Panel.[7]

2.3 Trends in part-time employment and involuntary underemployment in post-apartheid South Africa

Many studies have documented that women are overrepresented in part-time employment (Rosenfeld and Birkelund 1995; Caputo and Cianni 2001). One reason for this is that part-time jobs provide women with the means to combine their work in the household (and childcare in particular) with remunerated work. An expansion in part-time work has also been a major component of the increase in women's share of total employment in many countries (Rosenfeld and Birkelund 1995; Bardasi and Gornick 2008).

Trends in total and in part-time employment among both men and women in South Africa are shown in Table 2.1. Consistent with the findings from other countries, the results show that the majority of part-time workers in South Africa are women, with women comprising between 59 and 64 per cent of the part-time employed across the years. The results also suggest that the growth in female part-time employment has been an important part of the feminisation of the labour force in South Africa. From 1995 to 2006 total employment grew by more than one-third (over 3.2 million jobs), with more than half of this increase accounted for by the growth in women's employment. In 1995, less than forty percent of the employed were women; by 2006 this had risen to nearly 43 percent. Of the increase in women's employment, more than thirty percent can be attributed to the growth in women's part-time employment which grew by 567 000 jobs over the period. Consequently, part-time employment has become an increasingly important component of women's work overall: in 1995, part-time employment

[7] For years in which there are data available, the estimates suggest that the majority of part-time workers who are reported to want longer working hours are available to take on extra work. On average, more than 88 percent of part-time workers who were reported to want additional working hours in the 2000 to 2006 September LFSs were available to start extra work within four weeks of the surveys.

accounted for only 12 percent of women's total employment; by 2006, this had increased to 19 percent.

In contrast, men's employment has grown by less than women's employment (in both absolute and percentage terms) over the period, with the increase in men's part-time work accounting for just under 18 percent of the total increase in male employment. Because the increase in part-time employment was smaller among men than among women, part-time employment became more 'feminised' over the period: from 1995 to 2006, women's share of part-time work grew from sixty percent to 64 percent.

Table 2.1. Total employment in South Africa, 1995-2006.

	1995	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Women									
Total female employment	3 807 (35)	4 382 (39)	5 266 (55)	4 753 (51)	4 717 (48)	4 814 (52)	4 884 (59)	5 285 (61)	5 533 (71)
Female part-time employment	472 (13)	751 (19)	1348 (31)	870 (25)	805 (21)	862 (24)	847 (25)	929 (26)	1039 (30)
Percentage of part-time employed who are women	60 (1)	59 (1)	62 (1)	61 (1)	60 (1)	62 (1)	60 (1)	63 (1)	64 (1)
Female part-time work as a percentage of all women's work	12 (0)	17 (0)	26 (1)	18 (0)	17 (0)	18 (0)	17 (0)	18 (0)	19 (1)
Men									
Total male employment	5 912 (44)	6 067 (43)	6 909 (69)	6 502 (57)	6 708 (64)	6 647 (63)	6 847 (71)	7 131 (73)	7 433 (85)
Male part-time employment	320 (11)	511 (16)	811 (22)	550 (18)	546 (26)	528 (20)	566 (22)	539 (21)	590 (23)
Male part-time work as a percentage of all men's work	5 (0)	8 (0)	12 (0)	8 (0)	8 (0)	8 (0)	8 (0)	8 (0)	8 (0)

Source: OHS 1995 and 1999; September LFSs: 2000 to 2006.

Notes: The data are weighted and counts are in thousands. Standard errors are in parentheses. All employment estimates (total and part-time) are for individuals older than 15 years of age, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing.

It is important to note, however, that nearly 85 percent of the increase in women's employment from 1995 to 2006, and more than 65 of the increase in men's employment, occurred with the introduction of the LFS in 2000. Furthermore, the increase in both men's and women's part-time work from 1995 to 2000 more than accounts for growth in

this employment over the entire period, and although estimates from the September 2000 LFS may be outliers, both women's and men's part-time work are estimated to have declined by more than twenty percent from 2000 to 2006. This suggests that at least some portion of the growth in total employment and of the fluctuations in part-time work over the period may be a consequence of StatsSA's efforts to be more inclusive and to improve the collection of information on individuals involved in marginal work, such as part-time employment and very small-scale self-employment.

Identifying individuals involved in survivalist and subsistence activities as employed is particularly difficult in the national household surveys. Because these individuals are more likely to be self-employed, measures of self-employment may be particularly susceptible to changes in data capture over time. Removing individuals who are self-employed from the sample and focusing just on wage (salaried) employment, helps to reduce some of the variation in employment estimates that derives from changes in the nature of data capture.

Estimates of wage employment by gender are shown in Table 2.2. Consistent with the findings for all the employed presented in Table 2.1, more than half of the increase in total wage employment from 1995 to 2006 (nearly 55 percent) can be accounted for by the expansion in women's wage work. In addition, part-time wage employment has been an important part of the rise in women's wage work, increasing by 152 000 jobs (about 38 percent) over the period. The percentage of part-time wage workers who are women has also increased over the years, from approximately sixty percent in 1995 to more than 67 percent in 2006.

Table 2.2. Wage employment in South Africa, 1995-2006.

	1995	1999	2000	2001	2002	2003	2004	2005	2006
Women									
Total female wage employment	3 508 (30)	3 662 (37)	3 855 (48)	3 830 (48)	3 758 (44)	3 914 (49)	3 947 (56)	4 129 (56)	4 320 (63)
Female part-time wage employment	405 (12)	503 (16)	612 (22)	506 (20)	456 (16)	520 (19)	479 (20)	553 (22)	557 (25)
Percentage of part-time wage employed who are women	60.5 (1.2)	62.5 (1.2)	63.0 (1.3)	64.0 (1.5)	64.2 (1.5)	65.9 (1.5)	64.0 (1.7)	64.9 (1.6)	67.3 (1.7)
Involuntary female part-time wage employment	138 (7)	256 (10)	193 (9)	152 (8)	142 (8)	166 (10)	164 (12)	166 (12)	163 (12)
Voluntary female part-time wage employment	267 (9)	227 (10)	414 (17)	349 (16)	312 (12)	353 (13)	313 (14)	387 (16)	393 (20)
Percentage of female part-time wage employment that is involuntary	34.1 (1.5)	53.0 (1.6)	31.8 (1.5)	30.3 (1.7)	31.4 (1.6)	31.9 (1.7)	34.4 (2.0)	30.0 (1.9)	29.4 (2.0)
Men									
Total male wage employment	5 346 (36)	5 033 (42)	5 586 (61)	5 351 (55)	5 479 (56)	5 510 (60)	5 579 (67)	5 889 (67)	6 013 (76)
Male part-time wage employment	265 (10)	301 (13)	355 (14)	284 (14)	254 (13)	269 (15)	269 (16)	299 (16)	270 (17)
Involuntary male part-time wage employment	85 (6)	186 (10)	151 (10)	99 (7)	93 (7)	95 (9)	106 (10)	116 (10)	106 (12)
Voluntary male part-time wage employment	179 (7)	97 (7)	204 (11)	179 (11)	159 (10)	172 (11)	158 (12)	182 (12)	160 (12)
Percentage of male part-time wage employment that is involuntary	32.3 (1.8)	65.8 (2.0)	42.6 (2.2)	35.7 (2.3)	36.9 (2.5)	35.7 (2.7)	40.1 (2.9)	39.0 (2.8)	39.9 (3.3)

Source: OHS 1995 and 1999; September LFSs: 2000 to 2006.

Notes: The data are weighted and counts are in thousands. Standard errors are in parentheses. All employment estimates (total and part-time) are for individuals older than 15 years of age with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. In 1995 only actual hours worked are available. Voluntary and involuntary part-time categories may not sum to total part-time due to missing information on the desire to work longer hours.

While a focus on trends in wage employment ameliorates concerns regarding the effects of changes in data capture on employment estimates, it is still possible that at least part of the measured growth in wage employment and in part-time wage work over the period reflects changes in data collection (particularly among men). Almost thirty percent of the rise in women's wage work from 1995 to 2006, and more than eighty percent of the increase in men's salaried employment, occurred over the years which correspond with

the introduction of the LFS (1999 to 2000), and it is not possible to identify how much of these increases are real changes. Furthermore, the expansion in men's part-time wage employment from 1995 to 2006 is more than accounted for by increases in this work which occurred from 1999 to 2000, and more than seventy percent of the overall growth in women's part-time wage work also occurred over this period.[8] Nonetheless, estimates from 2002 onwards, which coincide with more consistent data collection, do point to relatively regular (albeit small) increases in wage employment, and in part-time wage work, for both men and women over the years.

In addition to presenting estimates of composite part-time wage employment, Table 2.2 distinguishes between voluntary and involuntary part-time wage work. Studies that distinguish between voluntary and involuntary part-time employment have been primarily concerned with the underemployed as an underutilised labour resource, focusing on the incidence of involuntary part-time employment in relation to the level of economic activity. Researchers have shown that although voluntary part-time workers often outnumber involuntary part-time workers, involuntary underemployment has typically become more prevalent over time with firms turning to part-time rather than full-time employment as a means of reducing labour costs. There is evidence also of a strong positive relationship between involuntary part-time work and unemployment. Faced with a recession, firms may reduce the hours that some of their employees work in addition to laying-off workers (Tilly 1991; Noreau 1994; Stratton 1996; Görg and Strobl 2003). Furthermore, individuals may be more willing to consider part-time employment as an alternative to a full-time job when faced with an environment of economic decline (Buddelmeyer *et al* 2008).

For South Africa, the results presented in Table 2.2 show that among both male and female part-time workers, the number of individuals working part-time voluntarily exceeded those part-time workers who desired longer working hours in all years bar

[8] Note that the estimated decrease in part-time wage work among both men and women that takes place from 2000 to 2006 is lower than when the self-employed are included.

1999.[9] The results also show that women in South Africa are more likely than men to choose part-time employment. With the exception of 1995, in all the years the share of involuntary part-time work in male part-time employment (approximately 41 percent, on average) is greater than in female part-time employment (about 34 percent, on average).

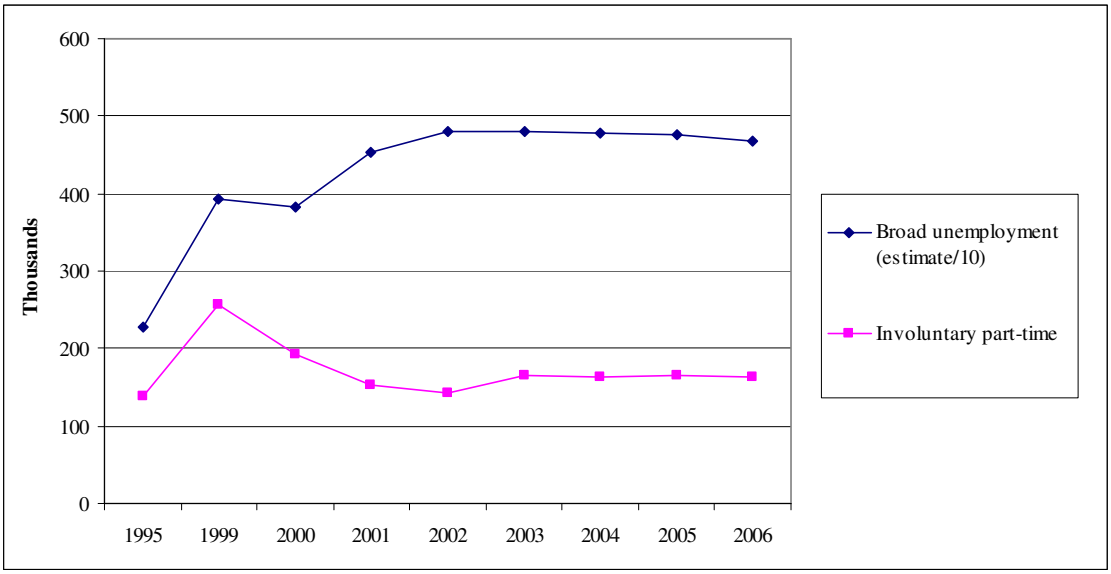
In contrast to findings in other countries, however, involuntary underemployment in South Africa has not become more prevalent over time. Following an increase of approximately forty percent in the number of female involuntary part-time workers, and an increase of nearly eighty percent in the number of male involuntary part-time workers from 1995 to 2000, involuntary part-time employment has remained quite stable, averaging at around 164 000 women and 106 000 men (particularly from 2003 to 2006). The share of involuntary part-time employment (for both men and women) in total part-time work has also remained relatively constant from 2001 onwards, at approximately 33 percent on average, while the share of involuntary part-time work in total wage employment has typically declined. This is because total employment has continued to grow from 2001 onwards.

To identify whether involuntary underemployment in South Africa follows changes in unemployment, graphical representations of trends in involuntary and voluntary part-time wage employment, together with trends in broad unemployment[10] are shown in Figures 2.1 (for women) and 2.2 (for men).

[9] Although it is not clear why this would be the case, the 1999 estimates of voluntary and involuntary part-time employment, for both women and men, are significant outliers in comparison to the other years.

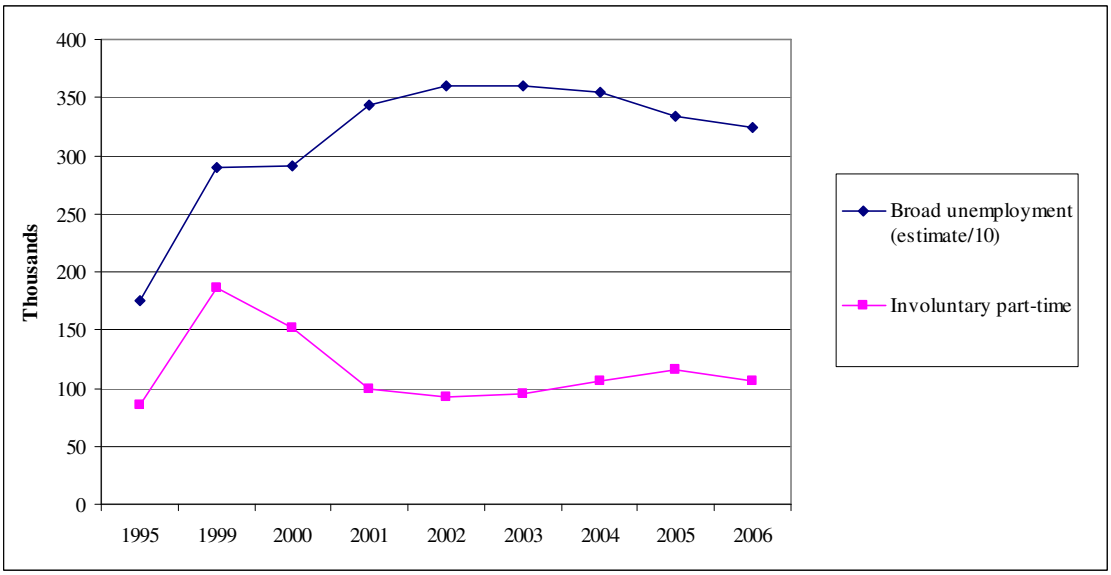
[10] The broadly unemployed include individuals who are willing to accept employment but who may not be actively seeking work. Estimates of broad unemployment have been divided by ten to allow them to be compared on the same scale as those for involuntary part-time work.

Figure 2.1. Involuntary part-time employment and broad unemployment – women.



Source: OHS 1995 and 1999; September LFSs: 2000 to 2006.

Figure 2.2. Involuntary part-time employment and broad unemployment – men.



Source: OHS 1995 and 1999; September LFSs: 2000 to 2006.

For the 1995 to 1999 period, the figures suggest that the change in involuntary part-time employment tracks the change in broad unemployment for both men and women. In particular, both involuntary part-time work and broad unemployment increased significantly over these years, suggesting a positive relationship between unemployment and underemployment. From 1999 onwards, however, changes in broad unemployment and in involuntary part-time work have moved mostly in opposite directions, especially for men. Figure 2.2, for example, shows that broad unemployment among men increased by more than 500 000 individuals from 1999 up until 2001, and continued to rise (albeit at a decreasing rate) up until 2003. Since 2003, broad unemployment among men has typically fallen (although the magnitudes of the reductions in unemployment in each year have not been that large). In contrast, involuntary part-time employment among men declined rapidly from 1999 to 2002 and then increased marginally in each year up until 2005. One possible explanation for why underemployment has not increased alongside unemployment concerns the introduction of protective labour legislation in South Africa, which may have made the 'hiring and firing' of workers more difficult (Bhorat and Lundall 2004).

2.4 Concluding comments

This chapter provides a contextual backdrop against which the analyses of the following chapters can be situated. The data sources used in this thesis are discussed, and the definitions of part-time work and involuntary underemployment are presented. Finally, the chapter describes the extent of total part-time employment, part-time wage employment and involuntary underemployment in South Africa and explores how these employment types have changed in relation to total employment, wage employment and unemployment in the post-apartheid period.

The descriptive analysis shows that in South Africa, as in many other countries, the majority of individuals who work part-time are women. Identifying consistent trends in employment and in part-time work specifically is complicated, however, by changes in data capture over the 1995 to 2006 period. Although it is not possible to differentiate

between real changes in employment, and changes which stem from improvements in data collection, the results point to an increase in women's part-time employment over the years that coincides with the documented feminisation of the labour force. In addition, women's share of total part-time employment has grown, and part-time employment accounts for an increasing share of women's employment over the period.

An analysis among the part-time wage employed revealed that as in other countries the proportion of part-time workers who desire longer working hours is less than the proportion who work part-time voluntarily. The results also show that women are more likely than men to work part-time voluntarily. But in contrast to other countries, where involuntary part-time employment has risen over time, in South Africa the number of involuntary part-time workers has remained relatively stable. There is also no consistent evidence of a positive relationship between involuntary underemployment and unemployment in South Africa. Although there were increases in both broad unemployment and involuntary part-time work for men and women from 1995 to 1999, in subsequent years broad unemployment and involuntary part-time employment have typically diverged.

The remaining analytical chapters investigate specific aspects of part-time wage employment in more detail. Given the overrepresentation of women in part-time employment in South Africa, Chapter 3 explores the implications of part-time work for women, examining wage differentials between female part-time and female full-time wage workers. Chapter 4 distinguishes among female part-time employees, differentiating between voluntary and involuntary part-time workers in an analysis of earnings and labour market attachment. Finally, Chapter 5 investigates trends in the gender wage gap and gender discrimination in South Africa according to whether employment is part-time or full-time.

Chapter 3

Investigating the wage gap between part-time and full-time female workers in post-apartheid South Africa[11]

In the previous chapter it was shown that women are overrepresented in part-time employment in South Africa and that, in conjunction with the documented rise in female labour force participation that has occurred in the country since 1995, part-time employment among women has increased substantially. In this chapter, the implications for women of working part-time are explored. In particular, the chapter investigates whether women are penalised for working part-time and recognises the importance of accounting for both observable and unobservable differences between part-time and full-time workers when examining the part-time/full-time wage gap.

One of the main findings of international studies on part-time employment is that women who work part-time earn less per hour, on average, than women who are employed full-time (Simpson 1986; Ermisch and Wright 1993). By using regression analysis, researchers aim to identify the variables that account for this wage penalty. An important issue often faced by researchers exploring wage differentials is that some of the factors that may explain how much individuals earn, as well as account for differences in earnings (like aptitude or attitude, for example), may be difficult or impossible to quantify. This complicates an analysis of any wage gap: unobservable differences between groups that are not random and that are not accounted for when estimating earnings could bias the measurement of the wage differential. If part-time work is associated with lower non-measurable skills than full-time work, for example, or if part-time workers exhibit fewer unmeasured labour market attributes, then the penalty to female part-time employment may be overstated. In this chapter, appropriate econometric techniques are used to control for both the observable and the unobservable

[11] The results presented in this chapter have been published in Posel and Muller 2008.

characteristics that can affect the magnitude of the wage gap between part-time and full-time workers.

The following section presents reasons for why a part-time wage penalty, in particular, may be anticipated along with a review of the appropriate empirical literature. This section also discusses one of the key amendments to labour legislation adopted by the post-apartheid government, namely the Basic Conditions of Employment Act of 1997, and identifies the potential implications of this Act for the nature of the part-time/full-time wage differential in South Africa. Section 3.2 presents some descriptive statistics that explore the characteristics of, and the mean returns to, female part-time and full-time wage employment in South Africa. The econometric methodology adopted to analyse the part-time/full-time wage gap and the analytical findings are provided in sections 3.3 and 3.4 respectively. In section 3.5 a series of checks are conducted to determine whether the econometric findings are robust. Section 3.6 summarises the main findings of the chapter.

3.1 Context

Establishing whether part-time workers are penalised for not working full-time has been a central feature of the literature on part-time employment. A part-time wage penalty may be expected for three main reasons. First, employers may incur fixed labour costs of hiring (associated with recruiting and training workers, for example) that are proportional to the number of workers rather than the number of hours worked. This can cause the average hourly costs of part-time jobs to rise in comparison to those of full-time jobs (Rodgers 2004; Hirsch 2005). Second, if part-time workers are not the primary breadwinners in a household they may have limited mobility. This makes it possible for firms to practice monopsonistic discrimination and to pay lower wages to part-time workers (Ermisch and Wright 1993; Hardoy and Schøne 2006). Finally, individuals who anticipate working part-time may invest less in education than individuals who intend working full-time (Booth and Wood 2008; Nelen and de Grip 2009). It is also possible that employers may be reluctant to provide training to part-time workers, whose labour force attachment is expected to be weaker than that of full-time workers (Owen 1978).

Most studies observe a mean (unadjusted) wage penalty to part-time employment in the order of between ten and thirty percent. To account for any measurable differences between part-time and full-time workers, standard Mincerian wage equations, with the logarithm of hourly wages as the dependent variable and human capital variables (like education and work experience) together with job and labour market characteristics as explanatory variables, are estimated using cross-sectional data by Ordinary Least Squares (OLS). Using the Oaxaca-Blinder decomposition technique (Blinder 1973; Oaxaca 1973) the part-time wage penalty is then decomposed into a component accounted for by differences in the observable characteristics of part-time and full-time workers, and a portion that is 'unexplained', reflecting differences in the returns to characteristics and in the intercept of the earnings function. Part-time workers are typically found to have less education and work experience than full-time workers and they also tend to be concentrated in particular occupations. Accounting for these observable differences often results in a decline in the magnitude of the wage penalty, although the wage gap usually remains negative. Two exceptions from studies that use cross-sectional data are Sweden and Norway, where the adjusted wage differential is positive. These findings have been attributed to low levels of wage dispersion and protective labour legislation in these labour markets (Hardoy and Schøne 2006; Bardasi and Gornick 2008).

One of the key difficulties encountered when exploring differences in outcomes like earnings between two groups is that in addition to the observable factors that distinguish the groups there may be differences in characteristics that are not measured and not controlled for. In the case of part-time and full-time workers, it may be that these workers differ also in terms of their motivation and/or commitment to the labour force, for instance.

The effect of unobservable differences between part-time and full-time workers on the measurement of the part-time/full-time earnings differential can be shown with the aid of a Mincerian wage equation in 3.1 below. The dependent variable $\ln(W_i)$, is the natural logarithm of individual hourly earnings and ε_i is the error term. Explanatory variables are included in the vector X_i (X_i is assumed to be uncorrelated with ε_i). Part-time

workers are identified by a dummy variable P_i, equal to 1 if an individual works part-time and 0 if he/she works full-time. U_i is a vector of unobservable characteristics and could include factors such as attitude, ability, motivation and commitment.

$$\ln(W_i) = \alpha + \beta X_i + \gamma P_i + \varphi U_i + \varepsilon_i \quad (3.1)$$

Quantifying characteristics like attitude, ability, motivation and commitment is difficult (if not impossible), and variables which may proxy for these characteristics (such as IQ scores for ability, for example) are not usually available in the datasets used by researchers. Because these factors are unobserved, an omitted variable problem will arise if the part-time wage gap, measured by γ, is estimated by OLS. In particular, the effects of the unobservable characteristics, represented here by the vector φ, would instead be incorporated into ε_i. If the differences in unobservable characteristics between part-time and full-time workers are not random, the resulting correlation between the part-time dummy variable and the error term will cause the estimate of γ to be biased and inconsistent (biased and inconsistent estimates of both β and γ will result if X_i and P_i are correlated – see Wooldridge 2006:99).

Studies measuring the part-time/full-time wage differential using cross-sectional data, often account for potential non-random selection into part-time employment by estimating two-stage Heckman selection models (Rodgers 2004; Hardoy and Schøne 2006; Bardasi and Gornick 2008). These models typically calculate an inverse Mills ratio from an equation that estimates the probability of part-time employment and then use this ratio in the wage equation to control for the selection bias. Controlling for selection on the basis of unobservable characteristics using Heckman's procedure (or a variation thereof)[12] often reduces, but does not usually eliminate, the wage penalty to part-time

[12] In the international labour market literature labour force participation is typically treated as synonymous with employment. The Heckman procedure in these studies therefore involves calculating the inverse Mills ratio based on a single probit equation estimating the probability of employment and then using this ratio to control for selection bias in the wage equation. Because of South Africa's high unemployment rates,

work. One of the difficulties associated with the approach is finding instruments correlated with part-time employment status but not with the wage, as is required for reliable identification of the selection equation in the first stage. Heckman's procedure has also come under increasing criticism from both econometricians and researchers (Manski 1989, Deaton 1997, Kennedy 1998, Hamermesh 2000). According to Kennedy (1998:256), for example, it can often "do more harm than good" and may introduce a measurement error problem as an estimate of the expected value of the error term is used in the second stage.

In the micro-economics literature, panel data methods are increasingly being used to address the effects of individual heterogeneity on earnings estimates (Hirsch 2005; Manning and Robinson 2004; Booth and Wood 2008). Fixed effects estimation, which relies on the unobservable differences between groups remaining constant over time, allows the unobserved component of the error term to be differenced out, resulting in unbiased and consistent estimators. Only a few studies have researched the part-time wage gap using longitudinal data, however. Hirsch (2005), analysing a panel dataset constructed from the Current Population Survey (1995 to 2002) for the United States (US), finds only a modest wage penalty among men, and no substantive penalty among women (who comprise more than two-thirds of part-time employment in the US). His results suggest that the penalty to part-time work is small for similar workers employed in

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however, it is inappropriate to equate labour market participation with employment. Chamberlain and van der Berg (2002) recommend extending Heckman's procedure for the South African case. This involves estimating the probability that an individual participates in the labour market and including the inverse Mills ratio generated from this estimation in a second regression looking at the probability of an individual obtaining employment. A second inverse Mills ratio can then be generated and included in the estimation of the wage equation. Adapting this methodology for an analysis of the part-time/full-time wage gap would require an additional step which accounts for selection into part-time or full-time work before estimating the wage equations. Multiple stages of selection makes the identification of appropriate instruments (variables that identify each selection equation but which are uncorrelated with wages) particularly onerous. A simpler procedure computes the inverse Mills ratio using the estimated probability of being in a particular labour market state calculated from a multinomial logit model. It is necessary to assume that irrelevant alternatives are independent when estimating multinomial logit models, however, and this assumption does not always hold (see Maddala 1983 and Kennedy 1998 for more detail).

comparable jobs, and stems primarily from worker differences in occupational characteristics, preferences and accumulated skills. Using data from the 2001 to 2004 Household, Income and Labour Dynamics in Australia Survey, Booth and Wood (2008) find that once unobserved individual heterogeneity is accounted for both part-time men and part-time women earn an hourly wage premium. The authors suggest that the estimated part-time wage advantage in Australia may be a compensating wage differential for the limited vacation and sick-leave entitlements of casual part-time workers or the result of high effective marginal tax rates that push up part-time wages.

This chapter investigates the returns to part-time and full-time employment in South Africa using not only cross-sectional data, but also data from South Africa's first national panel dataset, the Labour Force Survey Panel. Exploring an earnings gap in part-time employment is especially interesting in the context of protective labour legislation, introduced in South Africa over the post-apartheid period. The Basic Conditions of Employment Act (BCEA) of 1997[13], in particular, is one of the key legislative changes that could affect the magnitude of the wage gap between part-time and full-time workers.

The BCEA outlines a minimum standard of rights and protection for all individuals in South Africa who work at least 24 hours a month with a single employer and, *inter alia*, entitles workers to paid leave, a written contract with employers and notice prior to dismissal (Department of Labour 1997). Although there is no national minimum wage in South Africa, the BCEA permits the Minister of Labour to determine minimum wages for employees by sector (Department of Labour 1997). Minimum wages are currently in place in the domestic services,[14] contract cleaning, private security, wholesale and retail trade, agricultural, civil engineering, forestry, hospitality, and taxi sectors. The value of the minimum wages stipulated by the Minister varies by sector; and within sector, by location of work and often by occupation. In some sectors, higher minimum hourly wages

[13] Further aspects of protective labour legislation in South Africa will be highlighted in Chapter 5 where the implications of changes in government policy for the measurement of the gender gap in wages are considered.

[14] The BCEA was extended to cover domestic workers in 2002.

are specified for those with lower working hours. In the domestic service sector, for example, employees who work less than 28 hours a week are entitled to an hourly wage that is approximately ten percent higher than the minimum specified for employees working longer hours (Department of Labour 2002). In the wholesale and retail sector, the minimum hourly wage for individuals working fewer than 28 hours a week can be up to 25 percent higher than that specified for individuals working longer hours (Department of Labour 2003). Provided that employers comply with the minimum wages determined under the BCEA,[15] the unadjusted hourly wages of individuals working part-time in South Africa may be higher, on average, than those of full-time workers. One possible motivation for the higher minimum hourly wages specified by the Minister in certain sectors may be to counteract the lower level of benefits typically received by those working fewer hours a week.[16]

The following section begins using data from the September 2003 Labour Force Survey (LFS) to compare the individual and job characteristics of part-time and full-time wage workers. Data from the pooled LFS cross-sections from September 2001 to March 2004 as well as the September 2001 to March 2004 LFS Panel are then used in section 3.3 to explore earnings differentials between the part-time and the full-time employed in a multivariate framework.

3.2 Descriptive statistics

Table 3.1 shows differences in the individual characteristics of part-time and full-time female wage workers aged 15 years and older in South Africa in 2003. Part-time workers are defined as wage employees who usually work fewer than 35 hours a week.

[15] Among domestic workers, for example, research suggests that although the conditions of employment for these workers have improved following the extension of the BCEA to cover the domestic services in 2002, compliance among employers remains low (Hertz 2005).

[16] Part-time workers who would have otherwise received benefits may find the value and/or number of benefits being offered by employers declining, however, if employers who pay minimum wages seek ways offset additional costs.

Table 3.1. Characteristics of female part-time and full-time wage employed, 2003.

	Part-time	Full-time
Mean age	38.93*	37.01
	(0.43)	(0.17)
Older than 59 years	0.03	0.02
	(0.01)	(0.00)
Mean years of education	8.53*	9.87
	(0.16)	(0.06)
Matric (Grade 12) or equivalent	0.19*	0.29
	(0.01)	(0.01)
Tertiary education	0.15*	0.20
	(0.01)	(0.01)
Married or living together[17]	0.50	0.49
	(0.01)	(0.01)
Previously married	0.15	0.14
	(0.01)	(0.00)
Never married	0.35	0.37
	(0.02)	(0.01)
White	0.14	0.17
	(0.01)	(0.01)
African	0.68	0.64
	(0.02)	(0.01)
Urban area	0.65*	0.73
	(0.01)	(0.01)
Children younger than seven years of age	0.71	0.61
	(0.04)	(0.01)
Children seven to 14 years of age	0.81*	0.67
	(0.04)	(0.01)
Number of observations	1 126	7 106

Source: September 2003 LFS.

Notes: The sample is restricted to aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses.

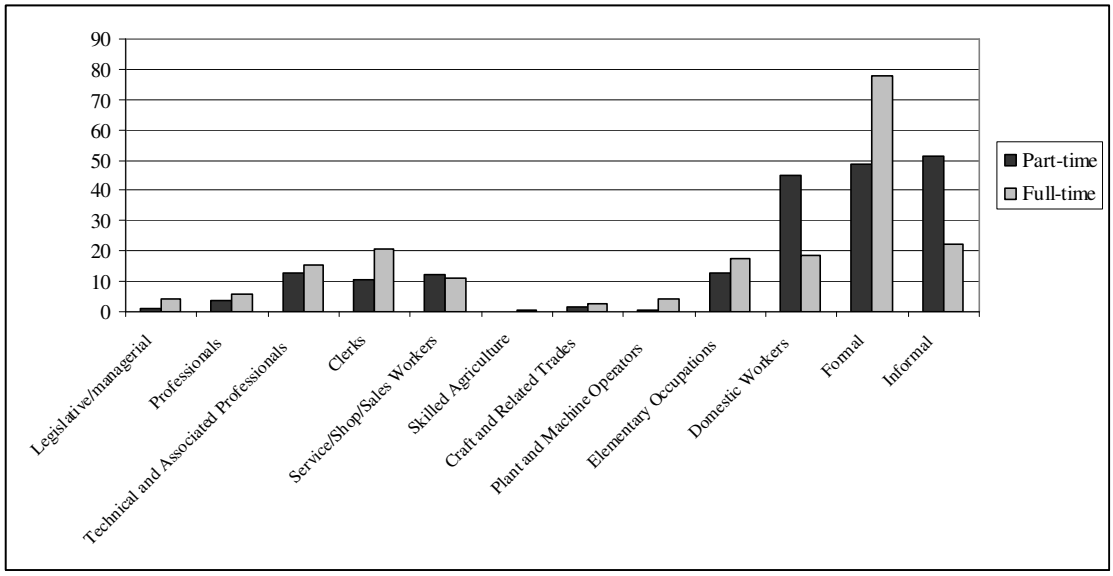
* indicates that means for part-time and full-time workers are significantly different using a 95% confidence level.

Clear differences between part-time and full-time workers can be identified. Female part-time workers tend to be older, on average, than female full-time workers and have significantly lower levels of educational attainment. Less than twenty percent of women working part-time in 2003 were reported to have completed Grade 12 or equivalent (as compared to just under thirty percent of women working full-time), while only 15 percent were reported as having completed any tertiary education (as compared to twenty percent of women working full-time). Women working part-time may also confront greater non-

[17] The LFS questionnaires only differentiated between marriage and cohabitation in surveys conducted from September 2004 onwards. In the LFS data used in this chapter and in Chapter 4 it is therefore impossible to distinguish individuals who are married and who live with their spouses from individuals who are not married but who reside with their partners.

market demands on their time, with a greater proportion of these women reporting that they live in households where children are present.[18]

Figure 3.1. Distribution of female wage employment by occupation and sector, 2003.



Source: September 2003 LFS.

Note: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted.

There are also marked differences in the characteristics of part-time and full-time female wage workers by sector and occupational category, as Figure 3.1 illustrates. More than half of women working fewer than 35 hours a week are employed in the informal sector, while less than one-third of women with full-time wage employment work in unregistered businesses. Part-time employment is also overrepresented in the domestic services sector where more than forty percent of female wage employees are employed and which is traditionally poorly remunerated. In contrast, less than twenty percent of part-time workers are employed in jobs typically associated with higher wages, such as the professional, technical and associated professional occupations.

[18] In the LFSs it is not possible to establish whether children are biologically related to a particular woman in the household – questions on intra-household relationships are limited in the household roster and permit only the identification of an individual's spouse/partner.

Table 3.2. Conditions of employment among female part-time and full-time wage employees, 2003.

Proportion of all workers	**Part-time**	**Full-time**
Work is temporary or casual	0.51*	0.17
	(0.02)	(0.01)
Receive pension fund contribution	0.21*	0.52
	(0.02)	(0.01)
Receive medical insurance contribution	0.12*	0.33
	(0.01)	(0.01)
Receive paid leave	0.29*	0.62
	(0.02)	(0.01)
UIF contribution	0.36*	0.64
	(0.02)	(0.01)
Member of a trade union	0.12*	0.29
	(0.01)	(0.01)
Domestic workers		
Work is temporary or casual	0.59*	0.36
	(0.03)	(0.02)
Receive pension fund contribution	0.06*	0.11
	(0.01)	(0.01)
Receive medical insurance contribution	0.01	0.01
	(0.00)	(0.00)
Receive paid leave	0.14*	0.25
	(0.22)	(0.02)
UIF contribution	0.21*	0.32
	(0.02)	(0.02)
Member of a trade union	0.01*	0.02
	(0.01)	(0.00)
Number of observations	1 042	6 723

Source: September 2003 LFS.

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses. * indicates that means for part-time and full-time workers are significantly different using a 95% confidence level.

Table 3.2 describes very large differences in the conditions of employment for part-time and full-time work.[19] Women who work part-time are significantly less likely than their full-time counterparts to have permanent employment or to receive any benefits (such as pension, medical aid or unemployment insurance fund[20] contributions from employers),

[19] Conditions of work that are not regulated by the BCEA - medical insurance, pension fund contributions and union membership - are included here.

[20] The Unemployment Insurance Contributions Act of 2002 provides for the imposition and collection of funds for contribution to the Unemployment Insurance Fund (Department of Labour 2002). The application of the Act was extended to domestic and seasonal workers only in March 2003. It is possible that many employers had not yet complied with the Act by September 2003 when the data analysed here were collected.

and a significantly smaller percentage reports union membership. In addition, despite remunerated leave being regulated by the BCEA, compliance among employers appears to be low (particularly for the part-time employed, with less than thirty percent of these workers reporting the ability to take paid leave). Among domestic workers, who are overrepresented in part-time employment in South Africa, conditions of employment are inferior to those for workers overall. Part-time domestic work is much more likely to be temporary or casual than full-time domestic work, which perhaps explains why domestic workers with part-time employment also receive significantly lower non-wage benefits than full-time domestic workers. Less than 15 percent of domestic workers who are employed for less than 35 hours a week report receiving paid leave, for instance, in comparison to a quarter of full-time domestic workers. In addition, only about one fifth of part-time domestic workers receive pension fund contributions from their employers as compared to more than half of domestic workers who are employed full-time.

Table 3.3 describes average wages and hours worked for women with wage employment in 2003. Monthly wages for full-time wage workers are more than double those for part-time workers. Part of this very large difference in monthly wages is likely to be explained by the definitional distinction between the part-time and the full-time employed: individuals employed in part-time jobs work significantly fewer hours per week, on average, than full-time workers. In terms of hourly wages, women working full-time still earn more than women working part-time, but the difference is no longer statistically significant. This simple comparison of average hourly wages does not provide any strong evidence of a wage penalty to part-time employment in South Africa, although differences in age, education and experience between workers have not been taken into consideration. The table also illustrates that in comparison to average hourly wages reported for both full-time and part-time workers, minimum wage determinations in the domestic services sector and in the wholesale and retail trade sector were relatively low. Earnings differences between part-time and full-time workers are explored further in the following section, where differences in both the measured and the unmeasured characteristics of these workers are accounted for.

Table 3.3. Average wages and working hours for part-time and full-time female employment, 2003.

	Part-time	Full-time
Reported[1]		
Monthly wage	1351.49*	2987.01
(Rands)	(77.10)	(69.81)
Hours worked	21.84*	45.99
	(0.31)	(0.14)
Hourly wages	14.80	15.96
(Rands)	(0.81)	(0.37)
Number of observations	1 135	7 160
Minimum wage determinations[2]		
Domestic work	4.87	4.42
Clerk/shop assistant	11.74	9.39

Source: September 2003 LFS; Department of Labour (2002 and 2003).

Notes: 1. The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses. * indicates that means for part-time and full-time workers are significantly different using a 95% confidence interval *2.* Wages are for those employed in metropolitan areas in South Africa.

3.3 Estimation of the part-time/full-time wage gap

3.3.1 Econometric framework

Part of the difference in mean wages between part-time and full-time workers will be explained by measurable differences between these groups (part-time workers have lower levels of education, for example). To determine how much of the wage gap between the part-time and the full-time employed remains once these observable differences are accounted for multivariate estimation techniques are utilised.

I begin by using Ordinary Least Squares (OLS) to estimate a Mincerian earnings equation for part-time and full-time wage workers (equation 3.2) with data obtained by pooling six biannual LFS cross-sections from September 2001 to March 2004. Pooling the cross-sectional datasets increases the sample size, which enhances the accuracy of the coefficient estimates and also improves the power of the test statistics (Wooldridge 2006).

$$\ln(W_i) = \alpha + \tau T_t + \beta X_i + \gamma P_i + \varepsilon_i \qquad (3.2)$$

The dependent variable is the natural logarithm of individual hourly earnings (W_i) and ε_i is the error term. Individual and job characteristics are included in the vector X_i, while the vector T contains five time-dummy variables, each representing one of the cross-sectional data-sets (the September 2001 LFS provides the base for comparison). Part-time workers are identified by a dummy variable P_i with full-time workers included in the comparison category. Depending on whether $\hat{\gamma}$ is positive or negative, a wage penalty (in the case of a negative estimate) or a wage premium (in the case of a positive estimate) to part-time employment may be observed.

By pooling the sample of part-time and full-time wage employees the analysis assumes that these workers have identical returns to their observable characteristics. The difference between part-time and full-time workers is captured by the dummy variable distinguishing the groups, with the result that working part-time has only an intercept effect on the earnings function. It is possible to allow also for differences in the returns to explanatory variables between part-time and full-time workers by using OLS to estimate separate wage regressions for part-time (P) and full-time (F) workers.

$$\ln(W_i^P) = \alpha^P + \tau T_t^P + \beta X_i^P + \varepsilon_i^P \tag{3.3}$$

$$\ln(W_i^F) = \alpha^F + \tau T_t^F + \beta X_i^F + \varepsilon_i^F \tag{3.4}$$

The Oaxaca-Blinder decomposition technique (Blinder 1973; Oaxaca 1973) is then used to decompose the average gap in the logarithm of hourly wages between part-time and full-time workers:

$$\overline{\ln(W^F)} - \overline{\ln(W^P)} = \sum_i \hat{\beta}^F (\overline{X}_i^F - \overline{X}_i^P) + \{((\hat{\alpha}^F - \hat{\alpha}^P) + (\hat{\tau}^F - \hat{\tau}^P)) + \sum_i \overline{X}_i^P (\hat{\beta}^F - \hat{\beta}^P)\} \tag{3.5}$$

For any variable Z, $\overline{Z}_i$ represents the mean value for individual i. The first term on the right-hand side of equation 3.5 calculates the portion of the wage differential attributable to differences in average levels of endowments between part-time and full-time workers.

The remaining terms together reflect the 'unexplained or 'adjusted' wage gap. Part of the unexplained wage gap is the result of differences in the intercepts of the two earnings equations (incorporating also differences in earnings between these workers that occur between year *t* and the base year, *ceteris paribus*). The unexplained gap also captures differences in the rate at which the measured characteristics of part-time and full-time workers are remunerated. The unexplained gap is often attributed to differences in returns between workers that exist because of discrimination, for instance, although the magnitude of the unexplained gap can also be affected by misspecification of the earnings equation.

Incorrect specification of the earnings equation can occur if there are non-random differences in the unobservable attributes of part-time and full-time workers – such as unmeasured labour market skills and/or motivation. Although these qualities are typically impossible to measure, omitting them from an OLS estimation of wage equations for different groups of workers could result in biased and inconsistent coefficient estimates. If there is negative selection into part-time work, for example, the significant penalty to part-time employment found in many studies of the wage gap between part-time and full-time workers, could be overstated. If part-time workers have 'inferior' unobserved characteristics then accounting for these would reduce any estimated penalty. The opposite would occur in the case of a wage premium, however, where controlling for negative selection on the base of unobserved characteristics should increase the magnitude of the estimated premium.

Using data from the LFS Panel (2001 to 2004) I estimate fixed effects regressions to control for the effects of unmeasured characteristics on the estimated coefficients. Because the data contained in the original cross-sections of the LFS are different to those in the cross-sections of the panel[21], I first pool the waves of the panel dataset in order to

[21] The samples in each LFS Panel cross-section are smaller than in each original LFS cross-section. In addition to the possibility of attrition, this may be a consequence of StatsSAs sampling methodology, which resulted in twenty percent of the sample being replaced following each wave. In addition, StatsSA released

provide a benchmark for comparison. With these data, I then estimate the following equation by OLS:

$$\ln(W_{it}) = \alpha + \varphi P_{it} + \beta X_{it} + \tau T_t + \delta_i + v_{it} \qquad (3.6)$$

W_{it} represents hourly wages of individual i in period t and P_{it} is a dummy variable equal to 1 if individual i had part-time employment in time t, and 0 if employment in that period was full-time. Individual, job and industry parameters for each individual i in period t are included in the vector X_{it}, while the vector T_t contains five time-dummy variables representing each wave of the panel (the first wave of the panel serves as the reference category). The composite error term comprises the time-invariant component δ_i, representing individual-specific characteristics, and the time-varying, or idiosyncratic, component v_{it}.

Next, I estimate the fixed effects transformation to remove δ_i:

$$\ln(W_{it}) - \ln(\overline{W}_i) = \varphi^{FE}(P_{it} - \overline{P}_i) + \beta^{FE}(X_{it} - \overline{X}_i) + \tau^{FE}(T_t - \overline{T}) + v_{it} - \overline{v}_i \qquad (3.7)$$

In this case, for any variable Z, $\overline{Z}_i$ represents the mean value for individual i over the t periods in the panel. A comparison of $\hat{\varphi}^{FE}$ from equation 3.7 with $\hat{\varphi}$ from equation 3.6 should reveal whether there is positive or negative selection into part-time wage employment. In the case of a negative selection effect, for example, $\hat{\varphi}^{FE}$ should exceed $\hat{\varphi}$.

Using the fixed effects transformation may result in inefficient estimators if the time-invariant component of the error term, δ_i, is uncorrelated with the explanatory variables. This could occur, for example, if selection into part-time employment is random. To investigate whether adopting a fixed effects model is appropriate, a Hausman test is used

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data on fewer variables in the LFS Panel (which excludes information on employee benefits, for example) than in the original LFS cross-sections.

to compare whether there are significant differences between the coefficients estimated by time-demeaning the data and those estimated under the assumptions of a random effects model.[22]

3.3.2 Results[23]

(a) Cross-sectional estimations

The results of the OLS estimations for the pooled sample of part-time and full-time workers are reported in Table 3.4. To assess how the magnitude of the wage gap between part-time and full-time workers is affected by different groups of correlates, results from three sets of estimations are described.

The first column of results (specification I) controls for individual characteristics such as age and job duration, education, marital status and location, while additional controls associated with occupations and firms, namely occupation type, industry, sector of employment (formal or informal), union status and whether or not the individual works in a large firm (in excess of fifty employees), are presented in the next column (specification II). In the final column (specification III) controls for conditions of work (whether employment is permanent rather than casual or seasonal, whether individuals receive pension fund and/or medical aid contributions and/or paid leave, and whether employers contribute to the unemployment insurance fund) are also included. Controls for population group and province of residence were also included in all three specifications together with dummy variables for each cross-sectional wave. Estimates for the full set of regressors are shown in Appendix A.

[22] A random effects model assumes that there is no correlation between the unobserved and independent variables, causing δ_i to be present in each time period. To eliminate the resulting positive serial correlation in the composite error term the random effects transformation subtracts from each variable a portion of the time average of that variable (rather than the entire time average as in fixed effects estimation). The portion of the time average subtracted is dependent on the variance of both the time variant and time invariant portions of the composite error term, as well as the number of time periods in the panel (Wooldridge 2006).

[23] A full set of estimates for the results presented in this section are provided in Appendix A.

Table 3.4. Estimating the part-time/full-time wage differential for women

	I	II	III
Part-time	0.259***	0.405***	0.477***
	(0.010)	(0.010)	(0.010)
Age	0.037***	0.025***	0.021***
	(0.002)	(0.002)	(0.002)
Age squared/1000	-0.382***	-0.244***	-0.202***
	(0.024)	(0.021)	(0.002)
Job duration	0.064***	0.035***	0.021***
	(0.001)	(0.001)	(0.001)
Job duration	-1.297***	-0.762***	-0.425 ***
squared/1000	(0.044)	(0.036)	(0.036)
Primary education	0.157***	0.108***	0.098***
	(0.012)	(0.010)	(0.010)
Incomplete secondary	0.585***	0.264***	0.244***
education	(0.013)	(0.011)	(0.011)
Matric (Grade 12) or	1.128***	0.482***	0.425***
equivalent	(0.014)	(0.014)	(0.013)
Post-matric	1.911***	0.819***	0.729***
	(0.014)	(0.017)	(0.016)
Married/cohabiting	0.107***	0.049***	0.040***
	(0.008)	(0.007)	(0.006)
Previously married	0.121***	0.065***	0.051***
	(0.011)	(0.009)	(0.009)
Urban area	0.321***	0.207***	0.185***
	(0.008)	(0.007)	(0.007)
Formal sector		0.314***	0.224***
		(0.014)	(0.014)
Large firm		0.101***	0.048***
		(0.007)	(0.007)
Union member		0.306***	0.136***
		(0.008)	(0.008)
Permanent employment			0.031***
			(0.008)
Medical aid			0.224***
contribution			(0.008)
UIF contribution			0.041***
			(0.007)
Pension fund			0.247***
contribution			(0.009)
Employee received			0.187***
paid leave			(0.008)
Constant	-0.459***	0.652***	0.660***
	(0.039)	(0.046)	(0.045)
Number of			
observations	51 198	49 447	47 701
R-squared	0.62	0.73	0.75

Source: Pooled LFS cross-sections from September 2001 to March 2004.

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are not weighted. Robust standard errors are in parentheses. The omitted marital status category is 'never married', and the omitted education category is 'no schooling'. In specifications II and III, 9 occupation dummies (including domestic work as a separate occupational category), and 11 industry dummies were also included. In addition, dummy variables for each cross-sectional wave, for population group and for province of residence are included in all three specifications. *** Significant at 1 %.

In contrast to the findings of many other studies on part-time work the results of all three specifications of the earnings function reveal a premium to women's part-time wage employment in South Africa. In specification I, the premium is approximately 29.5 percent.[24] Including controls for occupational characteristics in specification II causes a substantial increase in the premium to part-time work up to nearly fifty percent, and a further rise in the part-time employment premium (to more than sixty percent) is observed in specification III, which controls also for employment conditions. Given the predominance of part-time workers in the informal sector and in domestic occupations, along with the inferior working conditions experienced by those who work part-time, these increases in the estimated premium across specifications are not unexpected. The findings in specifications II and III therefore suggest that, for otherwise identical women employed in identical occupations, those who work part-time will earn more than their full-time counterparts.

The remaining coefficient estimates presented in Table 3.4 corroborate those of many other studies of wages in South Africa (Butcher and Rouse 2001; Chamberlain and van der Berg 2002; Casale and Posel 2007; Casale and Posel 2009). Across all specifications there is a positive, non-linear relationship between hourly wages and age. An increase in job duration is also associated with an increase in hourly wages which diminishes as the time spent in a given job increases. Education has a positive and significant effect on the wages of female wage employees which increases with the level of education attained. In specifications II and III, the inclusion of controls for union membership and sector of employment show that union members and individuals employed in the formal sector earn more than non-union members and informal sector workers. The results also suggest that individuals who report working in large firms, workers who are permanently employed, as well as those who receive various benefits earn more than individuals employed in smaller firms, workers who are employed on a casual/temporary basis and workers who do not receive benefits.

[24] Note that the percentage return to a dummy variable in a semi-logarithmic model is obtained using the following formula: $100.\{\exp(coefficient)\} - 1$.

In the previous sets of estimations, part-time and full-time workers were constrained to have identical returns to their endowments. To account for the possibility that part-time and full-time workers experience differences in the rate at which their observed characteristics are remunerated, OLS regressions are estimated for the separate samples of part-time and full-time female wage workers. The results of the Oaxaca-Blinder decomposition analysis, used to attribute portions of the part-time wage gap to differences in coefficients, observed characteristics, and in the intercept terms between each group, are shown in Table 3.5 (detailed results for the separate earnings estimations are presented in Appendix A). The three different specifications presented include the same controls as used for the results shown in Table 3.4.

Table 3.5. Oaxaca-Blinder estimates of the part-time/full-time wage differential for women.

	I	**II**	**III**
Total (unadjusted) differential	-3.1	-3.7	-5.0
Endowments	-24.7	-39.3	-46.5
Coefficients	-59.7	-36.8	-35.0
Constant	81.3	72.3	76.5
Adjusted differential	21.6	35.6	41.5

Source: Pooled LFS cross-sections from September 2001 to March 2004.

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are not weighted. In the regressions the omitted marital status category is 'never married', and the omitted education category is 'no schooling'. In specifications II and III, 9 occupation dummies (including domestic work as a separate occupational category), and 11 industry dummies were also included. In addition, dummy variables for each cross-sectional wave, for population group and for province of residence are included in all three specifications. The wages of female full-time workers are used as the reference category in the decompositions. Note that a negative sign indicates an advantage to full-time workers.

In all three specifications, the unadjusted differential for the involuntary part-time/full-time comparison is negative, revealing a wage penalty to part-time employment of between three and five percent. Women who work full-time, however, have a significant advantage over part-time workers in terms of their individual and job characteristics. In specification I that controls only for individual characteristics, the endowments of full-time workers account for more than 24 percent of their wage advantage over part-time workers. The portion of the wage gap explained by observable differences between part-time and full-time wage workers increases to almost forty percent when accounting for

job characteristics in specification II and to more than 45 percent when controlling also for conditions of work in specification III. Adjusting for these differences in endowments causes the wage penalty to part-time employment to become positive in all three specifications, indicative of an hourly wage premium.[25] This premium is the largest (at more than forty percent) when a full set of controls is included in specification III.

In all three specifications the source of the part-time premium derives from the intercept term. Despite full-time workers receiving larger returns to their endowments (of between sixty and 35 percent), this is more than offset by a significantly larger constant for individuals who work part-time. This finding suggests the presence of a 'wage floor' in part-time work in South Africa, created perhaps by minimum wages and below which wages cannot fall.

(b) Estimates using panel data

One of the problems with cross-sectional estimates of the wage gap is that the estimated coefficients may be biased because of selection into part-time and full-time employment on the basis of unobserved characteristics. To control for the effects of unobserved heterogeneity on the parameter estimates, data from the LFS Panel are used to estimate

[25] Note that the Oaxaca-Blinder estimates can be sensitive to the reference group chosen to perform the decomposition (Cotton 1998). In this chapter the wages of female full-time workers have been chosen as the non-discriminatory or reference wage structure. If the returns to observable characteristics are higher for full-time than for part-time workers, and if full-time workers are also endowed with better characteristics than part-time workers, on average, then the portion of the wage gap attributable to differences in productive characteristics would be larger (and the adjusted wage gap smaller) than when using part-time workers as the reference group. Consequently, using part-time workers as the reference category causes the estimated adjusted wage differential to increase (the adjusted wage differentials for the three specifications are 26.4, 41.5 and 48.7 percent). This confirms the finding of a premium to female part-time employment in South Africa. Larger adjusted wage differentials (24.8, 37.0 and 41.6 percent) are also found when using the average estimated returns for the pooled sample of female part-time and full-time wage workers as a reference.

fixed effects regressions. The concern with using panel data, however, is that these data may suffer from the problem of attrition.

Before presenting results from the fixed effects estimation, Table 3.6 compares selected characteristics of the sample of female part-time and full-time workers in the rotating panel with those from the full cross-sections (which comprise information on the original samples interviewed) as a way to assess how representative the panel cross-sectional waves are. The results presented show that for both part-time and full-time workers, mean hourly earnings for individuals who remain in the panel are marginally higher than for individuals in the full pooled cross-sections. Individuals in the panel are also slightly older, on average, are more likely to be married or previously married and are also more likely to be employed in the formal sector. The findings suggest that individuals who are better paid, and who are employed in more stable jobs, may be less mobile and consequently more likely to remain in the panel. Nevertheless, differences in the average characteristics across the samples remain quite small.

Another way of establishing how representative the panel data are is to compare the OLS estimates obtained from the pooled waves of the panel data set with those estimated using pooled data from the full LFS cross-sections. These estimates, calculated using the full set of controls, along with those from the fixed effects estimation[26], are shown in Table 3.7 below.

[26] In the fixed effects estimations only variables that change over time can be included. In this analysis, dummy variables controlling for education have also been omitted. This is because the time span of the panel is too short to expect many real changes in educational attainment among the wage employed (and any measured changes may be the result of measurement error).

Table 3.6. Mean sample characteristics of employed women: pooled full cross-section waves versus pooled panel waves.

	Pooled full cross-sections		**Pooled panel cross-sections**	
Part-time employment	0.12		0.13	
	(0.00)		(0.00)	
	Part-time	**Full-time**	**Part-time**	**Full-time**
Hourly earnings	12.22	12.72	12.86	13.66
	(0.30)	(0.07)	(0.42)	(0.10)
Age	39.49	37.84	40.20	38.72
	(0.14)	(0.05)	(0.18)	(0.06)
Married/cohabiting	0.48	0.46	0.51	0.51
	(0.00)	(0.00)	(0.00)	(0.00)
Previously married	0.15	0.14	0.17	0.16
	(0.00)	(0.00)	(0.00)	(0.00)
Primary education	0.31	0.22	0.28	0.19
	(0.00)	(0.00)	(0.00)	(0.00)
Incomplete secondary education	0.27	0.29	0.32	0.33
	(0.00)	(0.00)	(0.00)	(0.00)
Matric (Grade 12) or equivalent	0.15	0.23	0.14	0.21
	(0.00)	(0.00)	(0.00)	(0.00)
Tertiary education	0.12	0.17	0.14	0.20
	(0.00)	(0.00)	(0.00)	(0.00)
African	0.69	0.66	0.67	0.64
	(0.00)	(0.00)	(0.00)	(0.00)
Coloured	0.18	0.17	0.18	0.18
	(0.00)	(0.00)	(0.00)	(0.00)
Indian	0.01	0.03	0.01	0.03
	(0.00)	(0.00)	(0.00)	(0.00)
White	0.10	0.13	0.11	0.13
	(0.00)	(0.00)	(0.00)	(0.00)
Formal sector	0.42	0.74	0.44	0.77
	(0.00)	(0.00)	(0.00)	(0.00)
Large firm	0.09	0.26	0.10	0.27
	(0.00)	(0.00)	(0.00)	(0.00)
Number of observations	6 690	44 548	4 138	25 927

Source: Pooled LFS cross-sections from September 2001 to March 2004; LFS Panel (September 2001 to March 2004).

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are not weighted. Standard errors are in parentheses. Hourly earnings are in real terms, using 2000 as the base year and CPI deflators provided by Statistics South Africa.

The first column reports the estimated coefficients from the pooled full LFS cross-sections,[27] while those in the second column show the parameter estimates calculated by ignoring the panel structure of the data and pooling the waves of the LFS Panel. A

[27] Estimates from the pooled cross sections presented here differ from those of specification III in Table 3.4 where additional controls for conditions of employment (specifically pension contributions and paid leave) were included – data on these types of benefits were not released in the LFS Panel and were omitted here to maintain comparability.

comparison of these results confirms the descriptive findings of Table 3.6 – namely that there are no substantial differences across the cross-sectional and panel samples.

Table 3.7. Pooled and fixed effects earnings estimations.

	Pooled full cross-sections	**Pooled panel cross-sections**	**Fixed effects**
Part-time employment	0.459***	0.441***	0.466***
	(0.010)	(0.013)	(0.014)
Age	0.023***	0.019***	-
	(0.002)	(0.003)	
Age squared/1000	-0.215 ***	-0.169***	0.117
	(0.020)	(0.031)	(0.116)
Job duration	0.026***	0.024***	0.009***
	(0.001)	(0.001)	(0.002)
Job duration squared/1000	-0.540***	-0.489***	-0.223***
	(0.037)	(0.047)	(0.071)
Primary education	0.105***	0.112***	-
	(0.010)	(0.016)	
Incomplete secondary education	0.258***	0.278***	-
	(0.011)	(0.016)	
Matric (Grade 12) or equivalent	0.455***	0.445***	-
	(0.014)	(0.019)	
Tertiary education	0.771***	0.741***	-
	(0.017)	(0.022)	
Married/cohabiting	0.043***	0.045***	0.035
	(0.006)	(0.009)	(0.028)
Previously married	0.057***	0.065***	0.013
	(0.009)	(0.012)	(0.027)
Urban area	0.195***	0.204***	-
	(0.007)	(0.010)	
Formal sector	0.261***	0.261***	0.094***
	(0.014)	(0.020)	(0.022)
Large firm	0.066***	0.066***	0.023*
	(0.007)	(0.009)	(0.012)
Union member	0.217***	0.227***	0.067***
	(0.008)	(0.010)	(0.012)
Permanent employment	0.132***	0.151***	0.081***
	(0.007)	(0.010)	(0.013)
Medical aid contribution	0.294***	0.289***	0.075***
	(0.008)	(0.011)	(0.012)
UIF contribution	0.099***	0.083***	0.036***
	(0.007)	(0.009)	(0.010)
Number of observations	48 311	28 288	28 449
R-squared	0.74	0.73	0.12 (within)

Source: Pooled LFS cross-sections from September 2001 to March 2004; LFS Panel (September 2001 to March 2004).

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are not weighted. Standard errors are in parentheses. In both regressions, the omitted marital status variable is "never married"; in the pooled regressions, the omitted education category is "no schooling". The estimations also include 9 occupation, 11 industry and 5 wave dummies, not reported here, and the pooled estimations controlled further for province of residence and population group. *** Significant at 1%; * significant at 10%.

The findings from both the pooled cross-sections and the pooled panel regressions reveal a large and positive premium to female part-time employment. In the final column the fixed-effects estimates for the time-demeaned panel data are reported. A Hausman test of systematic differences in the coefficients between a random and fixed effects model generated a chi-squared statistic of 3603.86, implying that the fixed effects estimator is more appropriate than the random effects estimator.

When estimating the within-transformation, the magnitude of the coefficient on part-time employment is larger in comparison to that estimated by OLS using data from the pooled waves of the LFS Panel, revealing a negative correlation between unobserved effects and part-time employment status. This finding suggests that the cross-sectional estimates of the premium to part-time employment presented earlier are likely to be underestimated – controlling for negative selection into part-time employment causes the size of the part-time employment premium to increase. In contrast, the positive coefficients for formal employment, union status and currently married/cohabiting are all lower in the fixed effects estimation than in the pooled panel, indicating that these characteristics are positively correlated with unobserved factors.

(c) Robustness checks

In addition to the problem of self-selection into part-time work that has been addressed in the preceding section, the comparison of wages between part-time and full-time workers may be affected by other sources of bias. The first concern is whether the premium to female part-time employment in South Africa is being driven by the overrepresentation of part-time employment in the domestic services sector. As is shown by the pooled OLS and fixed effects estimates presented in the second row of Table 3.8, modifying the samples to exclude domestic workers reduces the estimated premium to part-time employment, but it remains large and significant. Higher levels of protection for women working in the domestic services in comparison to women involved in other forms of low skilled part-time employment may account for this reduction in the part-time employment premium, and can be explained by the extension of minimum wage legislation to the domestic services sector.

Table 3.8. The estimated wage premium to female part-time employment with different definitions, samples, and reduced controls.

	Pooled panel cross-sections	**Fixed effects**
35-hour threshold	0.441***	0.466***
	(0.013)	(0.014)
Excluding domestic workers[1]	0.359***	0.438***
	(0.018)	(0.020)
Redefining part-time employment:		
- less than forty hours a week	0.376***	0.373***
	(0.010)	(0.011)
- less than 28 hours a week	0.566***	0.596***
	(0.016)	(0.017)
Removing the tails of the weekly hours distribution:		
- less than eighty hours[2]	0.425***	0.457***
	(0.013)	(0.014)
- less than sixty hours[3]	0.375***	0.425***
	(0.013)	(0.015)
- more than twenty and less than sixty hours[4]	0.199***	0.290***
	(0.014)	(0.016)
Compressing the weekly hours distribution:		
- (less than twenty hours)*1.2 and	0.316***	0.371***
(more than 45 hours)*0.8	(0.012)	(0.014)

Source: LFS Panel (September 2001 to March 2004).

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. From a total sample of 28 288 employed women in the pooled waves, the sample selections reduced the total sample by: 1. 6 541 observations; 2. 461 observations; 3. 2 657 observation; and 4. 4 210 observations. The data are not weighted. Standard errors are in parentheses. In all regressions, the omitted marital status variable is "never married"; in the pooled regressions, the omitted education category is "no schooling". The estimations also include 9 occupation, 11 industry and 5 wave dummies, not reported here, and the pooled estimations controlled further for province of residence and population group. *** Significant at 1%.

The second concern is that the results may be sensitive to the 35-hour threshold that was adopted to define part-time workers. The estimates presented in the fourth and fifth rows of Table 3.8 test whether the premium to female part-time wage employment in South Africa is robust to changing the cut-off defining part-time employment. The results show that the part-time employment premium remains robust and large, both to raising the threshold defining part-time work to forty hours a week and to lowering it to 28 hours a week. Using a forty-hour threshold to define part-time employment results in a lower premium in comparison to the estimates calculated with the 35-hour cut-off, however,

while lowering the threshold to 28 hours causes the size of the part-time employment premium to increase considerably (this result is consistent with the Department of Labour's minimum wage determinations that specify a higher hourly wage in selected sectors for individuals who work fewer than 28 hours a week).

A third potential source of bias arises because information on hourly wages is not collected directly in the LFS data. The estimates of hourly wages utilised here, which were calculated by dividing weekly or monthly wages by reported working hours, may therefore be susceptible to the problem of 'division bias' (Manning and Robinson 2004). Of particular concern to this study is that the hourly wages of full-time workers may be deflated if these workers overstate their working hours. Similarly, if part-time workers understate their working hours then hourly wages for the part-time employed will be inflated. To address possible reporting bias in working hours information, rows seven to nine of Table 3.8 report estimates of the premium to part-time employment when the sample is truncated to include only those workers with 'credible' working hours. Approximately ten percent of the sample of female employees reported working sixty or more hours a week (about 17 percent of whom reported working eighty or more weekly hours). The estimated premium decreases with the removal of outliers from the top end of distribution of working hours, but it remains large and significant throughout. Truncating the distribution of working hours both from above (removing those working sixty hours or more) and from below (removing those working twenty hours or less) also causes the premium to decline, although it remains significant.

Another way to address the potential under-reporting of working hours by part-time workers, and over reporting of working hours by full-time workers is by compressing rather than truncating the working-hours distribution. The last row of Table 3.8 shows the estimated part-time/full-time wage gap when the working hours of those working less than twenty hours a week are inflated by twenty percent, and the hours of those employed in excess of 45 hours a week are simultaneously deflated by twenty percent. Unlike the previous adjustments, which all altered the size of the part-time and full-time samples while leaving individuals' hourly wages unchanged, compressing the working-hours

distribution in this manner leaves the part-time and full-time samples intact and instead changes the value of hourly wages for individuals at the tails of the distribution. The results show that the premium to female part-time employment remains robust to compressing the hourly earnings distribution (although the estimated premium is lower than when using the original hourly wage values).

A remaining source of bias in the longitudinal estimates of the part-time employment premium arises because the change in part-time status may be determined simultaneously with a change in wages. This simultaneity bias causes correlation between the explanatory variable (in this case the change in part-time employment status) and the change in the error term. As is the case with sample selection bias, ignoring this correlation will result in biased and inconsistent parameter estimates.

It is possible to remedy the problem of simultaneity bias in panel data using a two-step approach. It is necessary to first remove the unobserved effect from the equations of interest, either by using first-differencing or a fixed effects transformation. Provided an instrumental variable for the endogenous variable in the transformed equation can be found, pooled two-stage least squares estimation can be used in the second step. There are two requirements for a good instrumental variable (IV) that must both be satisfied: the variable must be correlated with the regressor for which it is to be used as an instrument (the higher the correlation the better) and it should be uncorrelated with the error term. In the case of panel data, it is also necessary that the instrument varies over time.

Unfortunately, however, the problem of simultaneity bias cannot be addressed using the data available in the LFS Panel. As was discussed in Chapter 2, the individual is the unit of analysis in the LFS Panel and StatsSA made no attempt to link individuals with their household members who have remained co-resident over each wave (Casale and Posel 2007). As a result, there is no household identifier and household-level variables cannot be created (it is possible that a lack of variability in household variables over the waves of the panel would have limited their use as potential instruments in any case). It was also not possible to identify any individual-level IVs, both exogenous to the wage equation

and highly correlated with the change in part-time employment status, with which to address this endogeneity. Consequently, if female wage workers are tempted to work part-time in response to higher wage growth (or if employers are induced to reduce working hours) then the estimated premium to part-time employment in South Africa may be overstated even having controlled for any unobservable differences between the part-time and the full-time employed.

3.4 Concluding comments

Studies that investigate the part-time/full-time wage gap typically find a raw wage penalty to female part-time employment that persists even once measurable differences between the groups (in terms of individual, job and other labour market characteristics) are accounted for. The results of this chapter, in contrast, show that in South Africa there is a substantial and significant hourly wage premium to female part-time employment.

A key concern addressed in this chapter is that the estimated premium to female part-time employment could be biased by the presence of non-random differences in unobserved characteristics between workers. Accounting for unobserved heterogeneity through a fixed effects estimation using panel data causes the magnitude of the estimated premium to increase. This finding suggests that there is negative selection into female part-time employment, i.e. women who work part-time may be less committed to paid employment, or less motivated to pursue a career, perhaps because of family responsibilities.

In addition to the problem of selection bias, a number of concerns that could bias the measurement of the pay gap between part-time and full-time wage workers were considered. The premium to part-time wage employment is shown to be robust to both raising and lowering the working-hour threshold defining part-time work, to removing individuals employed as domestic workers from the estimating sample, and also to controlling for possible measurement error in the reporting of hours worked. It remains a

concern, however, that the premium to female part-time employment could be overstated as a result of simultaneity bias.

The evidence presented in this chapter is consistent with South Africa's protective labour legislation. In particular, South Africa's minimum wage determinations, which are higher for those individuals who work fewer hours in a number of sectors, may create a wage floor below which wages cannot fall. A wage floor may also result from workers' need to obtain a minimum level of subsistence given imperfect adherence to minimum wage determinations by employers (Posel and Muller 2008). It is important to note, however, that evidence of an earnings premium does not mean that part-time employment is 'better' than full-time employment. Women who work part-time in South Africa are concentrated in poorly remunerated occupations (such as in domestic work), and in jobs that offer less security and fewer benefits than full-time employment.

Although this chapter has explicitly considered the implications of part-time employment for women in South Africa, the results presented here are not unique to female part-time workers. Despite the sample of men who work part-time being significantly smaller in comparison to the sample of women, the estimates shown in Table A1 of Appendix A reveal a premium to male part-time wage employment that is even higher than that for women.[28] Evidence of negative selection into part-time employment for male wage workers is also provided by these estimates.

In the following chapter a distinction is made among individuals who choose to work part-time (voluntary part-time workers) and individuals who work part-time and desire longer working hours (involuntary part-time workers). The chapter investigates what

[28] Very few studies consider the part-time pay gap for men, notably because in many countries men comprise only a small proportion of part-time employment. In a recent study, however, O'Dorchai *et al* (2007) investigate the wage gap between male part-time and full-time private sector workers in Belgium, Denmark, Ireland, Italy, Spain and the United Kingdom using matched employer-employee data. Their results concur with much of the literature investigating the part-time wage gap for women, and show that men in these countries are penalised for working part-time.

characteristics distinguish voluntary and involuntary part-time workers and explores whether the premium to female part-time employment is robust to differentiating among part-time workers.

Chapter 4

Distinguishing among the part-time employed: Voluntary and involuntary part-time wage employment in post apartheid South Africa[29]

Studies of part-time and full-time employment among women often assume implicitly that women *choose* part-time work, even if this is a constrained choice in the face of childcare and other home responsibilities, and that women would not work more if additional employment was made available. But in developing countries, and particularly countries like South Africa that face high and rising unemployment rates and widespread poverty, a significant share of women who work part-time may be involuntarily underemployed. Although these women may prefer full-time employment they may be forced to take on part-time jobs because there is no other, or more, employment available.

Despite it being possible to differentiate between voluntary and involuntary part-time workers using the data available in South Africa's national household surveys there has been only one (unpublished) study that has utilised this distinction (see Muller 2005). Distinguishing between workers who choose to work part-time and those who do so involuntarily may be useful for a host of reasons. Voluntary and involuntary part-time workers are likely to have different motivations for working part-time. There may also be variation in the individual and household characteristics of each group as well as in their occupations and earnings. In addition, policy responses to voluntary and involuntary part-time work may differ. Although rising levels of involuntary part-time work may be viewed unfavourably, expanding part-time opportunities may be desirable for parents who seek to combine child-care and other household responsibilities with paid employment.

[29] The results of this chapter were presented at the Biennial conference of the Economics Society of South Africa in September 2009 (Muller 2009b).

In Chapter 2 it was shown that voluntary part-time workers outnumber the involuntarily underemployed in South Africa, and that both types of part-time employment have remained relatively stable over the years (particular since 2000). In this chapter, I explore further the distinction between women who choose to work part-time and those part-time workers who desire longer worker hours. In particular, three sets of questions are investigated. First, the chapter examines how different voluntary and involuntary part-time workers are from each other, and from full-time workers, in terms of their individual attributes as well as in their household and occupational characteristics. Second, I consider the returns to voluntary and involuntary part-time work and examine specifically whether the premium to women's part-time work, identified in the previous chapter, is robust to a distinction among the part-time employed. Third, I identify whether there is evidence of differences in labour market attachment among voluntary and involuntary part-time workers.

Using data from the September 2003 Labour Force Survey (LFS), the next section presents descriptive statistics contrasting voluntary and involuntary part-time employment and full-time wage work among women. The correlates of voluntary and involuntary part-time employment are then explored using multivariate analysis with data from the pooled LFS cross-sections from September 2001 to March 2004. These data sources are also used in section 4.2 to investigate earnings differences among voluntary and involuntary part-time workers, both descriptively and with multivariate analysis. Finally, data from the September 2001 to March 2004 LFS Panel are used in section 4.3 to identify whether there are differences in the labour market attachment among voluntary and involuntary part-time workers. In each section a review of the relevant literature is also provided.

4.1 Differences in voluntary and involuntary part-time wage employment

As was shown in Chapter 3, part-time jobs typically offer fewer benefits (such as medical aid and/or pension fund contributions) than full-time jobs and are less secure. Female wage-workers who work part-time in South Africa are also less likely than their full-time

counterparts to have a written contract with their employer or to have a permanent job. In addition, part-time work is less likely than full-time work to offer opportunities for advancement (part-time workers may have less opportunity to acquire on-the-job training, for instance) and has also been associated with long-term costs that include reduced pension income in old-age (Ginn and Arber 1998). In spite of these negative outcomes, part-time employment constitutes a sizeable portion of the labour market in many countries. Some individuals may prefer part-time employment: studies of part-time employment among women usually recognise that the opportunity to work part-time helps women who have household and family responsibilities (including, for example, the care of children) to combine household work and paid work and thereby maintain a "more continuous attachment to the labour market" (Long and Jones 1981:414). Rosenfeld and Birkelund (1995) argue that women may choose reduced working hours particularly if they have access to alternative sources of income, such as benefits from a spouse's employment and/or a welfare state. The ability to work fewer hours and possibly to have greater flexibility with regards to the scheduling of work hours is also likely to benefit students as well as individuals who, for medical reasons perhaps, cannot work a full day.

For other individuals, however, working part-time may offer the only alternative to unemployment. On the supply side, new (or young) labour market entrants may lack the skills, experience and/or training required for some full-time jobs, and may work part-time as a means of gaining work experience or while obtaining formal qualifications. On the demand side, the number of full-time jobs offered by firms may be reduced as they move toward more flexible work practices. Firms often prefer to employ workers on a part-time basis, as providing fewer (if any) fringe benefits and reduced overtime pay means lower production costs (Tilly 1991). In addition, some jobs are "well-suited to part-timers, with an emphasis on daily or weekly peak hours and on flexible schedules, as are low skilled jobs with routine and repetitive tasks" (Williams 1995:36).

Although studies do not usually make a direct comparison between voluntary and involuntary part-time workers, a few researchers have recognised that there may be

differences among individuals who work part-time when comparing part-time workers to those who work full-time and to other labour market groups. Leppel and Clain (1993) use data from the March 1988 Current Population Survey to examine the determinants of labour market status in the United States. Separate multinomial logit models with five labour market categories (distinguishing the full-time employed, voluntarily part-time workers, involuntarily part-time workers as well as unemployed and economically inactive individuals) are estimated, across nine age categories. The results of this study show that the odds of choosing part-time employment rather than working full-time are higher for women with small children and women who have more educated spouses. In addition, the odds of women working part-time voluntarily increase for women older than 25 who have fewer years of completed schooling. Similarly, they find that less-educated women who are older than 25 years of age are more likely to work part-time involuntarily rather than in full-time jobs. An important limitation of their study, however, is that the estimation procedure does not allow for the inclusion of any occupational controls that could affect individuals' preferences for longer working hours.

Barret and Doiron (2001) use the 1989 Canadian Labour Market Activity Survey to explore the selection of men and women into voluntary and involuntary part-time employment and into full-time work. They use a queuing model, which also accounts for the decision of individuals to supply their labour to the market. In comparison to full-time workers, their results show that job characteristics, such as occupation and industry of employment, as well as location, are more important determinants of whether an individual involuntarily works part-time than individual characteristics. In addition, their estimations suggest that characteristics associated with a greater likelihood of non-participation, such as less education and the presence of other workers in the household, are associated with a preference for part-time work.

Most recently, Görg and Strobl (2003) pool data from the 1996 to 1998 Continuous Sample Survey of Populations in Trinidad and Tobago and estimate probit equations to compare involuntary part-time workers to those who work part-time voluntarily. Their results show that the probability of working part-time involuntarily rather than choosing

part-time work decreases significantly as the level of education attained by workers rises and that part-time workers in urban areas are more likely than those in rural areas to desire longer working hours. With respect to occupational characteristics, they find that involuntary part-time work is negatively associated with government jobs, and positively associated with working night shifts and on weekends. Surprisingly, however, their results reveal no significant differences in marital status or in household composition (captured by variables controlling for the number of children and the number of elderly individuals in the household) between voluntary and involuntary part-time workers.

Despite the differing methodologies adopted in these studies, the results suggest that differences in the preferences of part-time workers for additional hours are likely to stem both from differences in personal characteristics among part-time workers as well as differences in the types and/or quality of part-time jobs. Using data from the September 2003 LFS, the following subsection compares the individual and job characteristics of female voluntary and involuntary part-time wage workers in South Africa. Voluntary and involuntary part-time wage workers are also compared to those who work full-time.

4.1.1 Descriptive statistics

The individual and household characteristics of voluntary and involuntary part-time wage workers and of the full-time wage employed in South Africa are described in Table 4.1. Involuntary part-time workers typically exhibit fewer productive characteristics than voluntary part-time workers, being significantly younger, on average, than voluntary part-time workers, and with lower levels of education. Only six percent of involuntary part-time workers have a completed tertiary qualification in comparison to nearly twenty percent of voluntary part-time workers, for example. In addition, a significantly larger percentage of involuntary part-time workers (nearly eighty percent) are African, as compared to just 62 percent of voluntary part-time workers. Surprisingly, part-time wage workers who would prefer longer working hours are also more likely than individuals

who choose to work part- time to live in households where young children also reside,[30] although this difference is not significant.

The characteristics of women who choose to work part-time suggest that these are women who have the financial security to do so. Women who voluntarily work part-time are significantly more likely to be married than involuntary part-time workers and to live in households where, on average, significantly more men are employed. In addition, voluntary part-time workers live in households where the mean income earned by other employed household members (almost R3000 per month) is more than double that earned in households where the involuntarily underemployed reside (approximately R1300 per month).

Differences among female part-time workers also translate into differences between each group of part-time wage workers and those women who work full-time. Female involuntary part-time workers tend to have significantly lower levels of educational attainment on average than female full-time workers, are significantly less likely to be white and are more likely to be African than full-time workers. In addition, the involuntarily underemployed are significantly more likely than full-time workers to live in households with young children and where, on average, other income from employment is significantly lower. Female voluntary part-time workers tend to be older on average than full-time workers, and like involuntary part-time workers, have significantly lower levels of educational attainment on average than female full-time workers. In addition, a significantly smaller proportion of voluntary part-time workers reports having never married, while a significantly larger proportion reports residing in households where young children are present.

[30] As explained in Chapter 3 it is not possible to identify a woman's biological children from the data available in the LFSs.

Table 4.1. Characteristics of female voluntary and involuntary part-time employees and female full-time employees, 2003.

	Involuntary part-time	**Voluntary part-time**	**Full-time**
Mean age	36.97	39.87$^{*\,\Psi}$	37.01
	(0.68)	(0.54)	(0.17)
Older than 59 years	0.01	0.04$^{*\,\Psi}$	0.02
	(0.01)	(0.01)	(0.00)
Mean years of education	8.06*	8.76*	9.87
	(0.23)	(0.20)	(0.06)
Matric (Grade 12) or equivalent	0.18*	0.19*	0.29
	(0.02)	(0.01)	(0.01)
Tertiary education	0.06*	0.19$^{\Psi}$	0.20
	(0.01)	(0.02)	(0.01)
Married or living together	0.41	0.54$^{\Psi}$	0.49
	(0.03)	(0.02)	(0.01)
Widowed or divorced	0.15	0.14	0.14
	(0.02)	(0.01)	(0.00)
Never married	0.42	0.31$^{*\,\Psi}$	0.37
	(0.03)	(0.02)	(0.01)
White	0.04*	0.18$^{\Psi}$	0.17
	(0.01)	(0.02)	(0.01)
African	0.79*	0.62$^{\Psi}$	0.64
	(0.02)	(0.02)	(0.01)
Urban area	0.68	0.63	0.73
	(0.03)	(0.02)	(0.01)
Mean number of children younger than seven years	0.89*	0.76*	0.62
	(0.05)	(0.03)	(0.01)
Mean number of children aged seven to 14 years	0.77	0.82*	0.67
	(0.06)	(0.04)	(0.01)
Mean number of employed men in the household	0.47	0.60$^{\Psi}$	0.55
	(0.03)	(0.02)	(0.01)
Mean number of other employed women in the household	0.18	0.14	0.18
	(0.02)	(0.02)	(0.01)
Mean number of unemployed individuals in the household	0.61	0.51	0.47
	(0.05)	(0.04)	(0.01)
Mean household size	4.64	4.57	4.16
	(0.18)	(0.13)	(0.03)
Mean other household income from employment (2003 Rands per month)	1 310.79*	2 959.84$^{\Psi}$	3 167.02
	(193.11)	(248.81)	(117.02)
Number of observations	365	1 125	7 106

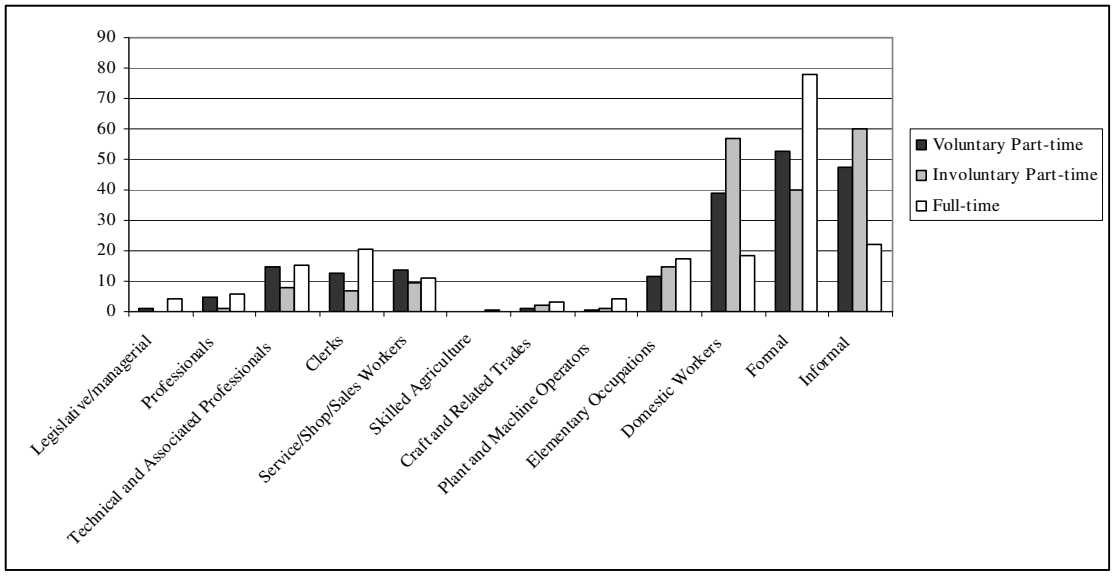
Source: September 2003 LFS.

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses. * Indicates that means/proportions for involuntary/voluntary part-time workers are significantly different from those for full-time workers (using a 95 percent confidence interval). $^{\Psi}$ indicates that means/proportions for involuntary part-time workers are significantly different from those for voluntary part-time workers (using a 95 percent confidence interval).

There are also marked differences in the characteristics of female voluntary and involuntary part-time workers and those in full-time wage employment by sector and

occupational category, as Figure 4.1 illustrates. Involuntary part-time workers are overrepresented in the informal or unregistered sector, which accounts for sixty percent of involuntary part-time employment. Involuntary part-time workers also predominate in the domestic services: nearly sixty percent of involuntary part-time workers are employed in the domestic services sector (as compared to less than forty percent of voluntary part-time workers, and less than twenty percent of full-time workers). When occupations other than domestic work are considered, voluntary part-time workers appear more likely than involuntary part-time workers to be employed in stable (and potentially more highly remunerated) occupations. The proportions of voluntary part-time workers employed in the professional and associated professional occupational categories (4.7 and 15 percent respectively) are roughly similar to the proportions of full-time workers employed in these categories (six and 15.3 percent), for example.

Figure 4.1. Distribution of female voluntary and involuntary part-time and female full-time wage employment by occupation and sector, 2003.



Source: September 2003 LFS.

Note: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted.

The descriptive analysis in Chapter 3 showed that part-time employment is more likely than full-time employment to be temporary and offers fewer benefits than full-time work.

This finding is confirmed in Table 4.2, which shows very large differences in the conditions of employment also among involuntary and voluntary part-time workers and the full-time employed. Both women who choose to work part-time and those who would prefer longer working hours are significantly less likely than full-time workers to have permanent employment, written contracts with their employers or to receive any benefits, and a significantly smaller proportion of both voluntary and involuntary part-time workers reports union membership.

Table 4.2. Conditions of employment among female voluntary and involuntary part-time wage employees and female full-time wage employees, 2003.

Proportion of all workers	**Involuntary Part-time**	**Voluntary Part-time**	**Full-time**
Written contract with employer	0.25*	0.43*ψ	0.65
	(0.02)	(0.02)	(0.01)
Work is temporary or casual	0.73*	0.39*ψ	0.17
	(0.02)	(0.02)	(0.01)
Receive pension fund contribution	0.11*	0.25*ψ	0.52
	(0.01)	(0.02)	(0.01)
Receive medical insurance contribution	0.05*	0.14*ψ	0.33
	(0.01)	(0.01)	(0.01)
Receive paid leave	0.13*	0.36*ψ	0.62
	(0.02)	(0.02)	(0.01)
UIF contribution	0.28*	0.39*ψ	0.64
	(0.02)	(0.02)	(0.01)
Member of a trade union	0.05*	0.14*ψ	0.29
	(0.01)	(0.01)	(0.01)
Number of observations	338	703	6 723

Source: September 2003 LFS.

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses. * Indicates that proportions for involuntary/voluntary part-time workers are significantly different from those for full-time workers (using a 95 percent confidence interval).ψ indicates that proportions for involuntary part-time workers are significantly different from those for voluntary part-time workers (using a 95 percent confidence interval).

Among part-time workers, those who involuntarily work part-time experience significantly inferior employment conditions in comparison to voluntary part-time workers and appear also to be employed in activities that are more precarious. For example, 43 percent of voluntary part-time workers report having a written contract with their employers and about sixty percent have permanent jobs. In contrast, only one-quarter of involuntary part-time workers report having a written contract with their

employers, and less than one third have permanent employment. In addition, if they should lose their jobs, less than one third of involuntary part-time workers would be eligible to claim unemployment insurance benefits. Furthermore, involuntary part-time jobs provide workers with limited long-term income security in comparison to the jobs occupied by voluntary part-time workers. Less than 12 percent of involuntary part-time workers report receiving pension fund contributions from their employers, in comparison to 25 percent of voluntary part-time workers (both voluntary and involuntary part-time workers are significantly less likely to report receiving pension fund contributions than full-time workers, however).

The results of this descriptive analysis suggest that, on average, women who involuntarily work part-time in South Africa differ markedly from female voluntary part-time workers. In comparison to voluntary part-time workers, part-time workers who desire longer working hours exhibit characteristics that are typically correlated with lower earnings in the South African labour market: they are younger, on average, and are less likely to have completed a tertiary education. Household characteristics are also significantly different between voluntary and involuntary part-time workers. Women who involuntarily work part-time live in households with fewer employed men and where the amount of other earned income is significantly lower, on average, than in households where voluntary part-time workers reside, suggesting that limited financial security may be a key factor behind their desire to work more. In addition, the type of occupation and the conditions of employment faced by workers appear to be important factors that distinguish female part-time workers who choose to work part-time from those who desire longer working hours. Involuntary part-time workers are more likely than voluntary part-time workers to be employed in occupations that are often poorly remunerated, namely domestic work and in elementary occupations. Furthermore, although part-time workers receive significantly fewer benefits than full-time workers, there are also significant differences in conditions of employment among the part-time employed: involuntary part-time workers are less likely than voluntary part-time workers to report having permanent employment, or a written contract with their employers, and are also less likely to receive UIF or pension fund contributions from their employers.

To obtain a more textured understanding of the predictors of involuntary as compared to voluntary underemployment, a multivariate analysis is used in the following subsection to identify under *ceteris paribus* assumptions the key observable characteristics that distinguish involuntary part-time workers from those who do not want to work more hours.

4.1.2 Multivariate analysis

Using pooled data from the full LFS cross-sections from September 2001 to March 2004 a simple probit model is estimated to test the correlates of involuntary versus voluntary underemployment:

$$\Pr(y_i = 1 \mid X_i, T) = \Phi(\eta, X_i, T) \qquad (4.1)$$

The dependent variable, y, is a binary categorical variable which takes the value of 1 if the individual is involuntarily underemployed and 0 if the individual works part-time voluntarily. X_i is a vector of observed characteristics for individual i, T contains five time-dummy variables, each representing one of the cross-sectional waves (the first wave is used as the reference category), η is a vector of parameters, and Φ is the standard cumulative normal distribution. Because the sample of involuntary part-time workers in each of the LFS cross-sections is quite small, using data from the pooled cross-sections of the LFS allows for a larger sample size which increases the reliability of the estimated coefficients and test statistics.

The problem of sample selection bias arises not only in estimations with continuous dependent variables (such as in Chapter 3), but also in models such as 4.1 which use binary dependent variables. The effects are the same, however: not accounting for non-random differences in unobservable characteristics between voluntary and involuntary part-time wage workers results in an endogeneity problem that can bias the estimated coefficients.

One possible solution to this problem is to estimate a series of Heckman-type equations to account for the selection of workers into voluntary and involuntary part-time employment. Such estimations are complicated by the possibility that non-random unobservable differences exist not only between voluntary and involuntary part-time wage workers, but also between these groups and the full-time employed. Attempts to adequately control for selection bias may be further stymied if unobservable differences also exist between the wage employed and the self-employed, between all individuals who work and those who are unemployed, and between labour market participants and the economically inactive. Given the complexity of the selection problem, identifying variables that can be used as exclusion restrictions in the data available in South Africa's national household surveys seems impossible.

Another solution is to estimate the likelihood of voluntary and involuntary part-time employment jointly in a multinomial logit model which also considers all the other labour market states. Multinomial logit models require the different alternatives being considered to be independent, however, and satisfying the independence of irrelevant alternatives assumption is usually difficult. More importantly for this chapter, demand-side characteristics (such as occupation type and conditions of work) are likely to be significant correlates of voluntary and involuntary part-time employment and controlling for these factors is impossible in a multinomial logit model that also includes the unemployed and/or non-participants in the labour market as an outcome category(s). In principle, panel data methods can also be used to control for unobserved effects in discrete response models. However, these models suffer from "substantial theoretical and computational challenges" as it is impossible to difference out the unobserved effect as in linear models (Burda and Harding 2009:1). One possibility involves treating the unobserved effect as a parameter which must be estimated along with the β. This requires a significant amount of data and inconsistent estimates of β will result unless there is both a large sample size and a large number of repeated cross-sections (Wooldridge 2002). In addition, although it is possible to estimate non-linear models non-parametrically, identification problems often result and such models are typically difficult to implement with the data available (Berry and Haile 2008).

Given these concerns, the results presented in Table 4.3 have not been corrected for sample selection bias and should be interpreted as conditional on the selection into voluntary and involuntary part-time work. Four sets of regression results are provided, with the number of variables constituting X_i increasing in each specification. In the first specification (I) dummy variables that identify the population group and marital status of the individual, and variables affecting the individual's potential productivity (age, education and job duration) are included. The influence of locational characteristics is captured by eight provincial dummy variables as well as a dummy variable indicating whether the individual resides in an urban or a rural area.

The second specification (II) controls further for household composition, including controls for the number of children and for the number of unemployed adults in the household. The number of employed men and the number of other employed women living in the household reflect the individual's access to earned income within the household. Because the data used in these estimations are from a series of cross-sectional datasets, and because information on unearned income within households – such as whether a member of the household receives a grant or has taken a loan – is only captured in the September rounds of the LFS, controlling for access to unearned income was not possible. Some of the household variables included may act as proxies for individuals' access to alternative income sources, however. For example, if unemployed household members were previously in occupations where their employers contributed to the unemployment insurance fund, then they may be eligible to claim unemployment insurance benefits.[31]

In specification III characteristics related to occupations are introduced – namely occupational and industry categories, whether the individual works in a large firm (in

[31] Provided an unemployed individual previously worked in excess of 24 hours in a month and contributed to the unemployment insurance fund, they are able to claim UIF benefits for up to 238 days. The fund pays a portion of the wage/salary that the individual earned while contributing to the fund up to a maximum of 58 percent of what was earned per day (Department of Labour 2003).

excess of fifty employees), union membership and sector of employment. Finally, controls for conditions of work are included in specification IV.

The results reported are the marginal effects, estimated at the mean for continuous variables and for a discrete change from 0 to 1 for the dummy variables. The effects of different subsets of controls across the regressions are discussed in detail below.[32] Likelihood ratio tests confirmed that the additional variables included in each specification were jointly significant.

a) Experience and job duration

Across all four specifications, the results suggest that the probability of working part-time involuntarily rather than voluntarily initially increases in age and then tapers off. The positive effect of the continuous variable for age is significant only in the first and fourth specifications, however, while the effect of the negative quadratic age variable is significant (albeit very small) across all specifications. Longer job duration is negatively associated with involuntary part-time work and may reflect the precarious and unstable nature of the jobs occupied by involuntary part-time workers.

[32] Full sets of estimates for all the econometric results presented in this chapter are provided in Appendix B.

Table 4.3. Marginal effects estimates from binomial probit comparing involuntary part-time wage workers to voluntary part-time wage workers.

	I	II	III	IV
Age	0.006*	0.003	0.005	0.008**
	(0.003)	(0.003)	(0.003)	(0.003)
Age squared/1000	-0.120***	-0.097**	-0.113***	-0.150***
	(0.038)	(0.039)	(0.040)	(0.041)
Job duration	-0.021***	-0.021***	-0.018***	-0.010***
	(0.002)	(0.002)	(0.002)	(0.003)
Job duration squared/1000	0.367***	0.363***	0.316***	0.148*
	(0.083)	(0.083)	(0.083)	(0.090)
Coloured	-0.075***	-0.060***	-0.071***	-0.073***
	(0.019)	(0.020)	(0.020)	(0.020)
Indian	-0.128***	-0.107***	-0.107**	-0.083*
	(0.038)	(0.041)	(0.042)	(0.045)
White	-0.204***	-0.185***	-0.195***	-0.156***
	(0.016)	(0.017)	(0.018)	(0.021)
Urban area	0.114***	0.105***	0.087***	0.083***
	(0.013)	(0.013)	(0.014)	(0.014)
Primary education	0.018	0.012	0.015	0.024
	(0.020)	(0.020)	(0.020)	(0.021)
Incomplete secondary education	0.071***	0.064***	0.061***	0.070***
	(0.022)	(0.022)	(0.023)	(0.023)
Matric (Grade 12) or equivalent	0.011	0.007	0.004	0.017
	(0.025)	(0.025)	(0.028)	(0.030)
Tertiary education	-0.094***	-0.098***	-0.040	-0.025
	(0.023)	(0.023)	(0.035)	(0.037)
Married/cohabiting	-0.035**	-0.009	-0.001	0.008
	(0.014)	(0.015)	(0.015)	(0.016)
Previously married	0.038*	0.037*	0.036*	0.041**
	(0.020)	(0.020)	(0.020)	(0.021)
Number of employed men in the household (aged 16 to 64 years)	-	-0.060***	-0.061***	-0.054***
		(0.011)	(0.011)	(0.011)
Number of employed women in the household (aged 16 to 59 years)	-	-0.017	-0.014	-0.018
		(0.013)	(0.013)	(0.013)
Number of unemployed adults in the household	-	0.026***	0.025***	0.024***
		(0.007)	(0.007)	(0.007)
Number of children younger than 7 years in the household	-	-0.020***	-0.017**	-0.016**
		(0.007)	(0.008)	(0.008)
Number of children aged 7 to 14 years in the household	-	0.003	0.002	0.001
		(0.006)	(0.006)	(0.006)
Professional	-	-	-0.058	-0.086
			(0.089)	(0.086)
Technical and associated professional	-	-	-0.003	-0.032
			(0.090)	(0.090)
Clerks	-	-	0.008	-0.036
			(0.091)	(0.088)
Sales and service	-	-	-0.040	-0.077
			(0.086)	(0.083)
Fishery	-	-	0.395***	0.328**
			(0.124)	(0.142)
Craft and related trades	-	-	0.085	0.037
			(0.112)	(0.110)
Plant and machine operators	-	-	-0.002	-0.017
			(0.113)	(0.114)
Elementary occupations	-	-	0.051	0.009
			(0.096)	(0.095)
Domestic Services	-	-	0.187*	0.160
			(0.112)	(0.115)

Table 4.3. Continued.

	I	II	III	IV
Mining	-	-	0.196	0.186
			(0.197)	(0.202)
Manufacturing	-	-	0.195***	0.247***
			(0.057)	(0.059)
Electricity	-	-	0.112	0.216
			(0.215)	(0.212)
Construction	-	-	0.166**	0.153**
			(0.075)	(0.076)
Wholesale/retail trade	-	-	0.283***	0.272***
			(0.046)	(0.048)
Transport	-	-	0.152*	0.227***
			(0.083)	(0.086)
Financial	-	-	0.235***	0.283***
			(0.053)	(0.055)
Community/social services	-	-	0.172***	0.208***
			(0.045)	(0.047)
Private households	-	-	0.017	0.028
			(0.078)	(0.078)
Formal sector	-	-	0.022	0.043
			(0.026)	(0.027)
Union member	-	-	-0.107***	-0.006
			(0.022)	(0.028)
Large firm	-	-	0.063***	0.055**
			(0.024)	(0.025)
Permanent employment	-	-	-	-0.164***
				(0.015)
UIF contribution	-	-	-	-0.018
				(0.017)
Medical aid contribution	-	-	-	-0.050*
				(0.026)
Pension fund contribution	-	-	-	-0.030
				(0.024)
Employee received paid leave	-	-	-	-0.042**
				(0.020)
Number of observations	6 725	6 725	6 550	6 308

Source: Pooled LFS cross-sections from September 2001 to March 2004.

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are not weighted. Standard errors are in parentheses. The omitted population group is 'African', the omitted marital status category is 'never married', the omitted education category is 'no schooling', the omitted occupational category is 'Managerial' and the omitted industry category is 'Agriculture'. Dummy variables for each cross-sectional wave were also included, as were dummy variables for each province. *** Significant at 1 %, ** significant at 5 %, * significant at 10 percent.

b) Education

In all four specifications, educational attainment is an important correlate of involuntary part-time employment. In comparison to women in part-time employment who are similar in other observed characteristics, the probability of being in involuntary part-time employment increases by between 6.1 and 7.1 percentage points when the woman has completed primary but not secondary school. However, having a completed tertiary education decreases the probability that female wage workers are working involuntarily

in part-time employment. This effect is significant in specifications I and II and insignificant in specifications III and IV; the magnitude of the marginal effect also declines substantially in the latter two specifications (from more than nine percentage points in I and II to less than three percentage points in IV). Multicollinearity between tertiary education and some of the occupation and industry variables introduced in specification III may account for this result.

c) Population group

In all specifications the results show that the probability of involuntary part-time employment is significantly lower among the other population groups in comparison to Africans, the reference group. In particular, among part-time workers who are similar in other observable characteristics, the probability of wanting to work longer hours is the lowest among Whites (between 15 and 21 percentage points lower than among Africans). Indians also have a smaller probability of involuntary part-time employment in comparison to Africans (between eight and 13 percentage points lower) as do Coloureds (six to 7.5 percentage points lower). These findings may reflect the effect of differences in income between individuals, for which population group may serve as a proxy.

d) Marital status and household characteristics

Across all specifications being previously married (currently widowed or divorced) rather than unmarried significantly raises the probability of working part-time involuntarily by about four percentage points. In specifications I, II and III the probability of involuntary underemployment is also lower for individuals who are married or cohabiting,[33] although this effect is significant only in specification I. It is possible that the decline in the magnitude (and significance) of the marriage/cohabitation dummy variable from specification II onwards is the result of multicollinearity: marriage/cohabitation is positively correlated with the number of employed men in the household which was introduced as a control variable in specification II.

[33] As noted in Chapter 3, the LFS data utilised here do not distinguish between marriage and cohabitation.

Having access to earned income (through living in a household with other employed men or women) significantly reduces the probability of working part-time involuntarily by about six percentage points in specifications II, III and IV. These findings suggest that financial support from household members may be a critical factor enabling women to voluntarily work part-time. In contrast, as the number of unemployed men and women in the household rises, the probability of a part-time worker wanting to work longer hours increases – indicative of the worker's need to work more hours in order to earn more to support members of her household. There is now also an inverse relationship between involuntary part-time employment and non-market activities such as childcare: although on average, there is no significant difference between voluntary and involuntary part-time workers in terms of the number of young children present in the household, when other factors affecting the probability of voluntary and involuntary part-time work are controlled for the results show that the probability of working part-time involuntarily declines as the number of young children in the household increases. This result is consistent with women choosing part-time employment as a way of combining market work with child care.

e) Location

Although the descriptive statistics showed no significant difference in the proportions of involuntary and voluntary part-time workers who reside in urban areas, in all specifications involuntary part-time workers are shown to be significantly more likely to live in urban areas than voluntary part-time workers. One explanation for this finding is that women may face greater financial pressure to work longer hours if living expenses are higher than in urban areas than in rural areas. It is also possible that the estimated relationship between involuntary part-time employment status and residing in an urban area is overstated as a result of a selection bias. This could occur if, for example, women who want to work longer hours migrate to urban areas where there are more employment opportunities.

f) Occupation and industry

The results reported in specification III suggest that involuntary part-time workers are significantly less likely than voluntary part-time workers to work in occupations that offer union protection. The marginal effect of union membership on the probability of involuntary part-time employment declines in specification IV, although it remains negative. This is probably accounted for by multicollinearity between union membership and conditions of work, for which controls are introduced in specification IV – in addition to higher wages, the benefits of unionised employment may also include preferential working and job conditions. Involuntary part-time work is also positively associated with working in a large firm. Large firms may be more willing than smaller firms to employ part-time workers to meet demand during peak periods, and may also be more likely to shorten the working hours of their full-time staff complement during economic slow downs. In addition, the probability of working part-time involuntarily is significantly lower in the agricultural sector (the reference industry) than in other industries. The types of jobs offered part-time in the agricultural sector (fruit and vegetable picking, for example) are likely to be seasonal in nature, attracting individuals specifically seeking interim employment.

g) Conditions of work

Involuntary part-time employment among women is associated both with significantly fewer benefits (medical aid contributions and paid leave, in particular) and with more insecure employment – working in an occupation which is permanent significantly decreases the probability of involuntary part-time work by 16.4 percentage points, *ceteris paribus*. This result is among the largest of the marginal effects, and would be consistent with involuntary part-time workers seeking ways to maximise their current income streams in the face of uncertain future employment prospects.

The results of the multivariate analysis largely support the earlier descriptive findings and suggest that significant differences exist between women who work part-time voluntarily

and those who are reported to desire longer working hours. In addition to individual characteristics like age and education, household characteristics, such as living in households where employed men and unemployed adults also reside, appear to be critical correlates of involuntary part-time work. The probability of involuntary part-time employment rises significantly with an increase in the number of unemployed adults residing in the household, for example, while the probability of involuntary part-time employment is significantly lowered by an increase in the number of employed men in the household. These findings suggest that financial support from household members (or a lack thereof) is a key factor influencing whether part-time workers want longer working hours. Job characteristics and conditions of employment in particular, are also important correlates of involuntary part-time employment. In comparison to the jobs of women who voluntarily work part-time, the work performed by involuntary part-time workers is significantly less likely to be permanent and less likely to offer union protection or benefits in comparison. An important difference between the multivariate and the descriptive findings, however, is in the relationship between voluntary/involuntary part-time status and the number of young children in the household. Although on average there is no significant difference between the numbers of young children living in households where voluntary and involuntary part-time workers reside, the probability of involuntarily working part-time declines with an increase in the number of young children in the household, *ceteris paribus*.

Differences in productivity-related characteristics between voluntary and involuntary part-time workers, together with evidence of differences in the quality of the jobs occupied by these two groups can also be expected to reflect in their remuneration. Wage differences between voluntary and involuntary part-time workers and the full-time employed are investigated in the following section.

4.2 Voluntary and involuntary part-time employment and wages

Despite female part-time workers earning significantly less per month, on average, than their full-time counterparts, as well as less per hour, the previous chapter provided evidence of a wage premium to female part-time employment once both observable and unobservable differences between each group of workers were accounted for. Given significant differences in the characteristics of voluntary and involuntary part-time workers highlighted above, this section investigates whether the wage premium persists once the heterogeneity in observed and unobserved characteristics between these two groups are accounted for.

Although a number of studies have investigated the wage gap between part-time and full-time workers, the effect of differences in working-hour preferences on the part-time/full-time wage gap is rarely considered. An exception is Barrett and Doiron (2001) who use data from the 1989 Canadian Labour Market Activity Survey to investigate earnings differentials among voluntary and involuntary part-time workers, as well as between each of these groups and the full-time employed. Their results show that on average, men and women who involuntarily work part-time earn less per hour than both full-time workers and individuals who prefer to work part-time. Controlling for differences in observable characteristics between workers causes the magnitude of these wage penalties to decline, but to remain negative. Controlling also for the possible endogenous selection of workers, using both full information maximum likelihood estimations as well as two-stage selection models, reduces the magnitudes of the estimated wage penalties even further (the authors note that identifying exclusion restrictions in their estimations that addressed the problem of sample selection bias was difficult, however).

To assess the implications of differentiating between voluntary and involuntary part-time workers for the measurement of the part-time/full-time wage gap in South Africa, the following subsection uses data from the September 2003 LFS to describe differences in the unadjusted (mean) wage differential between voluntary and involuntary part-time wage workers and the full-time employed. This is followed by an econometric analysis of

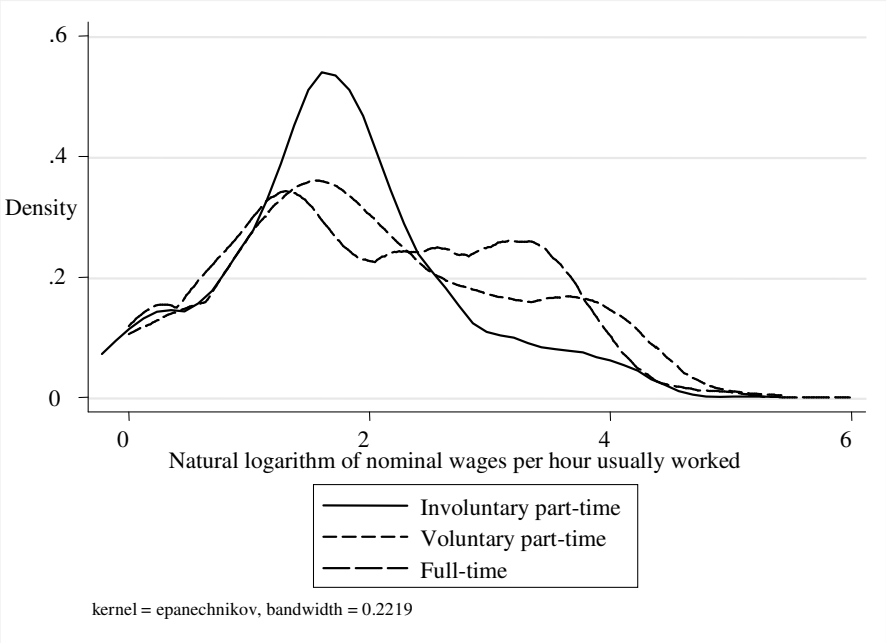
earnings differences in section 4.2.2 which uses pooled data from the full LFS cross-sections from September 2001 to March 2004 and from the LFS Panel (September 2001 to March 2004) to illustrate the effect of controlling for both observable and unobservable differences between voluntary and involuntary part-time workers and those who work full-time on the part-time/full-time wage gap.

4.2.1 Average wages and working hours of voluntary and involuntary part-time workers and the full-time employed

Average hourly and monthly wages, along with average working hours for both voluntary and involuntary part-time workers as well as the full-time employed are shown in Table 4.4. The distributions of hourly wages for voluntary and involuntary part-time workers and the full-time employed are shown by kernel density plots in Figure 4.2, and the distributions of working hours for voluntary and involuntary part-time workers are shown in Figure 4.3.

Given significant differences in average characteristics between voluntary and involuntary part-time workers and those working full-time described in section 4.1 above, it is not surprising to find substantial differences in the wage distributions of these groups and in mean wages. From Figure 4.2 it can be seen that the hourly wage distribution for involuntary part-time workers is more compressed than that for voluntary part-time workers and is skewed to the right. As a result, average hourly wages are significantly higher among part-time workers who do not want more hours. In contrast, the distribution of working hours for voluntary part-time workers, shown in Figure 4.3, is more compressed than for the involuntarily underemployed and is skewed to the left. Mean working hours are therefore lower among involuntary part-time workers than among voluntary part-time workers.

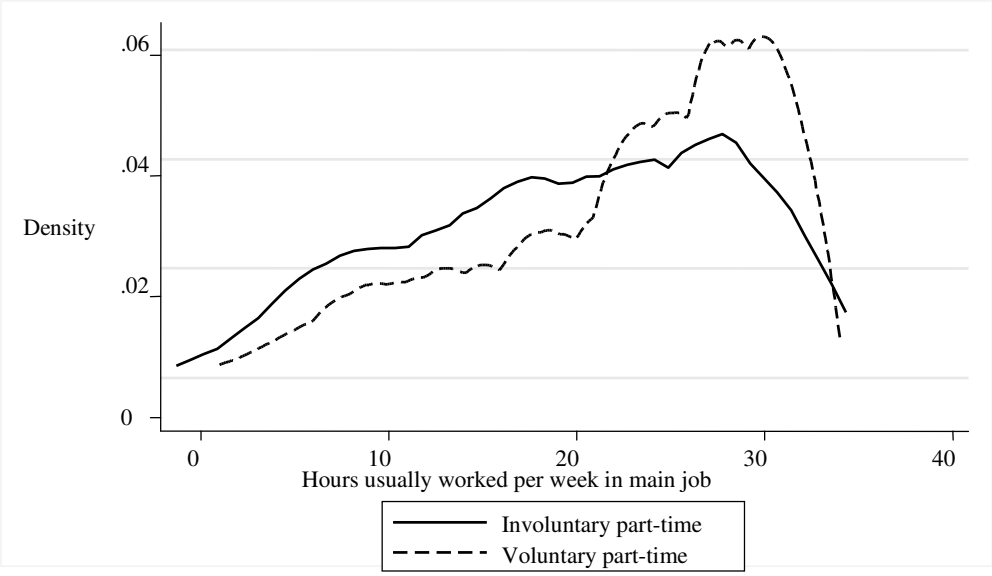
Figure 4.2. Kernel density plot of the natural logarithm of nominal wages per hour usually worked, 2003.



Source: September 2003 LFS.

Working fewer hours, on average, than voluntary part-time workers, and at a lower mean hourly wage, translates into monthly wages that are significantly lower among involuntary part-time workers. On average, involuntary part-time workers earn less than half the monthly wage of individuals who voluntarily work part-time.

Figure 4.3. Kernel density plot of usual hours worked per week in main job, 2003.



Source: September 2003 LFS.

Table 4.4. Average wages and working hours for female involuntary and voluntary part-time and female full-time wage employees, 2003.

	Involuntary Part-time	**Voluntary Part-time**	**Full-time**
Monthly wage	700.13*	1670.34*Ψ	2987.01
(Rands)	(52.12)	(107.73)	(69.81)
Weekly hours worked	19.61*	22.94*Ψ	45.99
	(0.56)	(0.35)	(0.14)
Hourly wages	9.77*	17.25Ψ	15.96
(Rands)	(0.77)	(1.11)	(0.37)
Number of observations	368	765	7 160

Source: September 2003 LFS.

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. * indicates that means for involuntary/voluntary part-time workers are significantly different from those for full-time workers (using a 95 percent confidence interval). Ψ indicates that means for involuntary part-time workers are significantly different from those for voluntary part-time workers (using a 95 percent confidence interval).

The statistics presented in Table 4.4 also reveal significant differences in both monthly and hourly wages between involuntary part-time workers and the full-time employed, and between voluntary part-time workers and the full-time employed. Involuntary part-time

workers earn significantly less per hour, on average, than full-time workers, while women who voluntarily work part-time earn significantly more. Because they work fewer hours, however, the monthly wages of both voluntary and involuntary part-time workers are significantly lower than for the full-time employed. Per month, the average wage for a voluntary part-time worker is about forty percent lower than for a full-time worker, while the average monthly wage of an involuntary part-time worker is less than one-quarter of that received by a full-time worker.

4.2.2 Multivariate analysis

In this section, wage disparities between voluntary and involuntary part-time workers are explored further. In order to examine whether the premium to female part-time employment in South Africa, identified in the previous chapter, is robust to a distinction among part-time workers, an econometric approach similar to that used in Chapter 3 is adopted. In this case, however, a distinction is made between voluntary and involuntary part-time workers.

The analysis begins by using pooled data from the full LFS cross-sections to estimate:

$$\ln(W_i) = \alpha + \phi V_i + \vartheta I_i + \beta X_i + \tau T_t + \varepsilon_i \qquad (4.2)$$

The dependent variable is the natural logarithm of individual hourly earnings (W_i) and ε_i is the error term. Individual, household and job characteristics are included in the vector X_i, and five dummy variables, each representing one of the cross-sectional data-sets, are included in the vector T_t (the first cross-sectional data set serves as the reference category). The dummy variable V_i takes on a value of 1 if the individual works part-time voluntarily, while the dummy variable I_i equals 1 if the individual is an involuntary part-time worker. Full-time workers are included in the comparison category. If the premium to female part-time wage employment in South Africa is robust to a distinction between voluntary and involuntary part-time wage workers, then both $\hat{\phi}$ and $\hat{\vartheta}$ will be positive,

signalling that after controlling for observed characteristics both groups of part-time workers earn more than full-time workers.

As in the previous chapter, three different specifications of the wage equation are estimated, with additional controls being included in successive estimations. If involuntary part-time workers have particularly 'inferior' measured characteristics, then controlling for these is likely to increase the size of any estimated premium to involuntary part-time employment relative to that estimated for voluntary part-time work. To determine whether the estimated returns to voluntary part-time employment are significantly different from those estimated for involuntary part-time employment, F-tests are used.

One concern with using a model such as (4.2) to estimate and compare the returns to voluntary and involuntary part-time employment is that it does not account for the possibility that there are also non-random unobservable differences between the two groups of workers. Failure to account for differences in selection between the two groups could bias the coefficient estimates. To address the problem of selection bias, data from the LFS Panel is used. First, the cross-sectional waves of the LFS Panel are pooled, and OLS is used to estimate:

$$\ln(W_{it}) = \alpha + \phi V_{it} + \vartheta I_{it} + \beta X_{it} + \tau T_t + \partial_i + v_{it} \qquad (4.3)$$

The key difference between (4.2) and (4.3) is in the specification of the error term. In (4.3) the composite error term has been disaggregated into a time variant and a time invariant component. The time invariant component of the error term, ∂_i, is presumed to capture the effects of unobservable characteristics that remain constant over time.

As was noted in the previous chapter, the problem of attrition is a key concern which arises when using panel data. To assess how representative the cross-sectional waves of the panel are given the distinction between voluntary and involuntary part-time workers, results from the estimation of equation 4.3 are benchmarked against those obtained by

estimating equation 4.2 using the pooled data from the full cross-sectional waves of the LFS.

The fixed-effects transformation is then estimated, where, through time-demeaning, the time invariant component of the error term is removed.

$$\ln(W_{it}) - \ln(\overline{W_i}) = \phi^{FE}(V_{it} - \overline{V_i}) + \vartheta^{FE}(I_{it} - \overline{I}_i) + \beta^{FE}(X_{it} - \overline{X}_i) + \tau^{FE}(T_t - \overline{T}) + v_{it} - \overline{v}_i \quad (4.4)$$

In Chapter 3, controlling for individual fixed effects in the wage estimations for part-time and full-time employment resulted in an increase in the estimated premium to female part-time employment, suggesting that workers were negatively selected into part-time employment. It is possible, though, that the selection effects into part-time employment may differ for voluntary and involuntary part-time workers. Negative selection may be expected among voluntarily part-time workers if these individuals have less commitment to the labour force or are less motivated, while the converse would be expected among the involuntarily underemployed if their desire to work longer hours signals greater motivation or a stronger commitment to employment. If there is negative selection into voluntary part-time work then $\hat{\phi}^{FE}$ from equation 4.4 will exceed $\hat{\phi}$ from equation 4.3. Similarly, $\hat{\vartheta}^{FE}$ from equation 4.4 should be lower than $\hat{\vartheta}$ from equation 4.3 if there is positive selection into involuntary part-time work.

The identification of a positive selection effect, however, may be complicated by the presence of attenuation bias. Attenuation bias occurs as a result of measurement error in an explanatory variable (errors in variables), and can cause parameter estimates to be biased towards zero (Kennedy 1998; Wooldridge 2006). If measurement error in voluntary/involuntary part-time status causes the fixed effects estimates to be underestimated, then it may be difficult to determine whether any decline in the fixed effects estimate of the wage premium relative to the OLS estimate is the result of positive selection or the consequence of attenuation bias. In addition, the effects of negative

selection may be understated in the presence of measurement error.[34]

The results of the wage regressions from the pooled cross-sectional data, estimated for three sets of covariates, are presented in Table 4.5. In the first specification, controls for individual characteristics (age and job duration, education, marital status and location) are included, and in the second specification additional controls for occupation type and industry, along with sector of employment, whether the firm is large (a large firm is one with more than fifty employees), and whether the individual belongs to a union are added. In the third specification, variables controlling also for conditions of work are included – whether employment is permanent rather than casual or temporary, whether the individual receives pension fund and/or medical aid and/or UIF contributions from their employer, and whether the employer provides paid leave.

The findings suggest that the wage premium to female part-time employment in South Africa is robust to a distinction among part-time workers, with an estimated wage premium to involuntary part-time employment of between 28 percent and 67 percent, and a premium to voluntary part-time employment of between thirty and 58 percent, depending on the controls utilised.[35] The results reflect that not only are there significant differences in observable characteristics between part-time workers and the full-time employed, but that substantial differences exist also among part-time workers.

[34] Kennedy (1998:141-143) discusses a number of corrective procedures that could be used to address the problem of errors in variables, namely weighted regression, instrumental variable methods and linear structural relations. Implementing weighted regression and/or linear structural relations methods is typically complicated by the fact that the variance of the measurement error is unknown. It was also not possible to implement an instrumental variable solution as an instrumental variable(s) correlated with voluntary/involuntary part-time status (for the OLS estimations) and with the change in voluntary/involuntary part-time status (for the fixed effects estimations) could not be identified in the data.

[35] As in Chapter 3, the percentage return to a dummy variable in a semi-logarithmic model is obtained as follows: $100.\{\exp(coefficient)\}-1$.

Table 4.5. Estimating the part-time/full-time wage differential for women.

	I	II	III
Involuntary part-time	0.250***	0.412***	0.513***
	(0.017)	(0.016)	(0.016)
Voluntary part-time	0.262***	0.402***	0.460***
	(0.012)	(0.011)	(0.011)
Age	0.037***	0.025***	0.021***
	(0.002)	(0.002)	(0.002)
Age squared/1000	-0.382***	-0.244***	-0.202***
	(0.024)	(0.021)	(0.020)
Job duration	0.064***	0.035***	0.021***
	(0.001)	(0.001)	(0.001)
Job duration squared/1000	-1.298***	-0.763***	-0.426***
	(0.044)	(0.037)	(0.036)
Primary education	0.158***	0.108***	0.098***
	(0.012)	(0.010)	(0.010)
Incomplete secondary	0.585***	0.264***	0.243***
	(0.013)	(0.011)	(0.011)
Matric (Grade 12) or equivalent	1.129***	0.482***	0.425***
	(0.014)	(0.014)	(0.013)
Post-matric	1.912***	0.819***	0.729***
	(0.014)	(0.017)	(0.016)
Married/cohabiting	0.107***	0.049***	0.040***
	(0.008)	(0.007)	(0.006)
Previously married	0.121***	0.065***	0.050***
	(0.011)	(0.009)	(0.009)
Urban area	0.321***	0.207***	0.184***
	(0.008)	(0.007)	(0.007)
Formal sector	-	0.314***	0.223***
		(0.014)	(0.014)
Large firm	-	0.101***	0.048***
		(0.007)	(0.007)
Union member	-	0.306***	0.136***
		(0.008)	(0.008)
Permanent employment	-	-	0.033***
			(0.008)
Medical aid contribution	-	-	0.224***
			(0.008)
UIF contribution	-	-	0.041***
			(0.007)
Pension contribution	-	-	0.246***
			(0.009)
Employee received paid leave	-	-	0.188***
			(0.008)
Constant	-0.459***	0.653***	0.662***
	(0.039)	(0.046)	(0.045)
Number of observations	51 172	49 425	47 685
R-squared	0.62	0.73	0.75

Source: Pooled LFS cross-sections from September 2001 to March 2004.

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are not weighted. Robust standard errors are in parentheses. The omitted marital status category is 'never married', and the omitted education category is 'no schooling'. In specifications II and III, 9 occupation dummies (including domestic work as a separate occupational category), and 11 industry dummies were also included. Dummy variables for each cross-sectional wave, for population group and for province of residence are also included in all three specifications. *** Significant at 1 %.

Controlling only for differences in individual characteristics in specification I results in a premium to voluntary part-time employment that exceeds that estimated for the involuntarily underemployed. When recognising in specification II that there may also be differences in the kinds of occupations and industries where part-time workers are employed, the magnitudes of the premiums to both voluntary and involuntary part-time employment increase. The premium to involuntary part-time work rises by more than the premium to voluntary part-time employment, however, reflecting that involuntary part-time workers are likely to be concentrated in occupations and industries that are associated with lower wages than those where voluntary part-time workers are employed. In specification III, the estimated wage premiums increase further and the difference between these premiums is even larger. This finding is consistent with the descriptive statistics presented earlier, which showed that part-time workers exhibit inferior conditions of work in comparison to full-time workers, and which also revealed that those part-time workers who desire longer working hours are employed in occupations that offer fewer benefits and are more precarious than the jobs occupied by voluntary part-time workers. The results of F-tests show that the difference in the premium to voluntary and involuntary part-time employment is significant only in specification III, however. It is therefore only after controlling for differences in their conditions of work that significant differences in the wage premiums to voluntary and involuntary part-time employment are observed, despite their being substantial differences also in the individual and occupational characteristics of these groups.

Although the results presented above are consistent with those presented in Chapter 3, failure to account also for differences in unobservable characteristics between voluntary and involuntary part-time workers and those who work full-time could bias the estimated coefficients. Possible differences also in the direction of selection into voluntary and involuntary part-time employment could further complicate the interpretation of the results: negative selection into voluntary part-time employment and positive selection

into involuntary part-time employment, for example, would reduce the difference in the wage premiums between each group.

To address the problem of selection bias, data from the LFS Panel is used to estimate a fixed effects regression, which differences out the unobserved effects. The results, which include a full set of controls, are shown in Table 4.6. The first column presents estimates from the pooled LFS data from the full cross-sections, and results from the pooled waves of the LFS Panel are shown in the second column. The estimates from the two OLS regressions are largely comparable, suggesting that non-random attrition (across full-time and part-time workers and among part-time workers) is not a particular concern in the panel sample. The third column reports the fixed-effects estimates, where the effect of non-random unobservable differences between voluntary and involuntary part-time workers and those who work full-time have been accounted for.

The estimates from all three specifications confirm the earlier cross-sectional findings, and show that the estimated wage premium to part-time work in South Africa is not sensitive to a distinction among part-time workers. A substantial and significant premium to both voluntary and involuntary part-time wage employment among women persists even when unobservable differences between workers have been accounted for.

Table 4.6. Wage estimations for involuntary and voluntary part-time vs. full-time female wage employment.

	Full cross-sections (pooled 2001-2004)	**Panel cross-sections (pooled 2001-2004)**	**Fixed effects**
Involuntary part-time employment	0.494**	0.488***	0.479***
	(0.016)	(0.021)	(0.023)
Voluntary part-time employment	0.443***	0.420***	0.462***
	(0.011)	(0.015)	(0.016)
Age	0.022***	0.018***	-
	(0.002)	(0.003)	
Age squared/1000	-0.213***	-0.164***	0.118
	(0.020)	(0.031)	(0.116)
Job duration	0.026***	0.024***	0.009***
	(0.001)	(0.001)	(0.002)
Job duration squared/1000	-0.541***	-0.491***	-0.224***
	(0.037)	(0.047)	(0.071)
Primary education	0.105***	0.111***	-
	(0.010)	(0.016)	
Incomplete secondary education	0.258***	0.277***	-
	(0.011)	(0.016)	
Matric (Grade 12) or equivalent	0.455***	0.444***	-
	(0.014)	(0.019)	
Tertiary education	0.771***	0.741***	-
	(0.017)	(0.022)	
Married/cohabiting	0.043***	0.045***	0.035
	(0.006)	(0.009)	(0.028)
Previously married	0.057***	0.065***	0.013
	(0.009)	(0.012)	(0.027)
Urban area	0.194***	0.203***	-
	(0.007)	(0.010)	
Formal sector	0.261***	0.260***	0.094***
	(0.014)	(0.020)	(0.022)
Large firm	0.066***	0.066***	0.023*
	(0.007)	(0.009)	(0.012)
Union member	0.217***	0.226***	0.067***
	(0.008)	(0.010)	(0.012)
Permanent employment	0.134***	0.154***	0.081***
	(0.007)	(0.010)	(0.013)
Medical aid contribution	0.294***	0.289***	0.075***
	(0.008)	(0.011)	(0.012)
UIF contribution	0.099***	0.083***	0.036***
	(0.007)	(0.009)	(0.010)
Number of observations	48 293	28 274	28 435
R-squared	0.74	0.73	0.12 (within)

Source: Pooled LFS cross-sections from September 2001 to March 2004; LFS Panel (September 2001 to March 2004).

Notes: The sample is restricted to women aged 15 years and older with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are not weighted. Standard errors are in parentheses. In all regressions, the omitted marital status variable is "never married"; in the pooled regressions, the omitted education category is "no schooling". The estimations also include 9 occupation, 11 industry and 5 wave dummy variables, not reported here; and the pooled estimations controlled further for province of residence and population group. *** Significant at 1% ** Significant at 5% * Significant at 10%.

In section 4.1 it was shown that women who involuntarily work part-time exhibit significantly inferior observable characteristics in comparison to female voluntary part-time workers. The results of F-tests suggest that accounting for differences in observable characteristics (including conditions of employment) between these workers and the full-time employed results in a premium to involuntary part-time employment that is significantly higher than that for part-time workers who do not want to work longer hours. The difference between the premiums to voluntary and involuntary part-time employment narrows considerably in the fixed effects estimation, however, and although controlling also for unobservable differences between workers causes the estimated premium to involuntary part-time work to exceed that for voluntary part-time employment, the difference in the magnitude of these estimated wage premiums is not significant. This narrowing of the gap in the wage premiums between voluntary and involuntary part-time workers appears to be a consequence of differences in the direction of the selection effect between voluntary and involuntary part-time workers. When comparing the results from column II and column III, it can be seen that the size of the coefficient on voluntary part-time employment increases when estimating the within transformation, while the there is a (small) decrease in the coefficient on involuntary part-time employment. These results are consistent with negative selection into voluntary part-time employment, and with positive selection into involuntary part-time employment.[36]

Even though the effects of endogeneity bias on the parameter estimates, introduced by the problem of sample selection, have been addressed in the fixed-effects estimation a further source of bias (in addition to that resulting from errors in variables) remains in the results presented above. As described in Chapter 3, simultaneity bias may occur if changes in employment status are a function of changes in the wage rate. Higher wage growth could see women working full-time choosing to work fewer hours, resulting in them changing their status to voluntary part-time employment. Alternatively, higher wage growth may induce employers to reduce working hours, causing women working full-time to become

[36] Note, however, that if measures of involuntary and voluntary part-time employment, as well as changes in these over time, have been measured with error, then findings of positive selection may be overstated (and negative selection understated).

involuntarily underemployed. Classification as an involuntary/voluntary part-time worker may also be dependent on earnings.[37] Higher wage growth could cause the involuntarily underemployed to become voluntary part-time workers (conditional on working hours) while low wage growth could result in the converse. The implication of simultaneity bias for the results presented here is that the estimated wage premiums to both voluntary and involuntary part-time employment may be overstated. But because it is not possible to identify any instrumental variables in the LFS Panel that distinguish between voluntary and involuntary part-time workers and the full-time employed, any potential overestimation of these wage premiums cannot be addressed.

4.3 Labour force attachment among voluntary and involuntary part-time workers

Although the premium to women's part-time employment in South Africa appears robust to a distinction between voluntary and involuntary part-time employment, evidence pointing to possible differences in the direction of selection into these employment categories would suggest that voluntary and involuntary part-time workers may exhibit differing degrees of labour market attachment. By using panel data to track the movements of individuals into and out of various labour market states over time it is possible to examine labour force attachment among the employed, and among part-time workers.

Blank (1989) explores labour market changes among women in the United States using data from the 1976 to 1984 Panel Study of Income Dynamics. Her results reveal that women typically show a high degree of attachment to their current labour market state, with more than 75 percent of women remaining in their same labour market status over the nine-year period. Among part-time workers, however, a larger probability of

[37] From the questions asked of respondents in the LFS questionnaires it is not possible to identify whether a part-time wage employee who is reported to want longer working hours would work these additional hours at the existing wage rate, or whether they would be content with their current hours given an increase in their wage. Similarly, for those who do not want longer working hours, it is not possible to determine whether their preferences would remain unchanged if they were faced with a higher or lower wage rate.

transition was found. Women who work part-time in a particular year were found to be more likely to change their labour market commitments the following year than women who work full-time or those who were absent from the labour market. Blank's findings also suggest that women do not often use part-time employment to transition into full-time work from non-work, with only about seven percent of her sample moving from out of the labour market into part-time work and then into full-time employment.

Recognising differences in hours preferences among part-time workers, Stratton (1996) uses labour force transition probabilities calculated from the March 1990 to March 1991 Current Population Survey to investigate whether involuntary part-time workers in the United States are more likely to change labour market status and move into full-time work than those in the voluntary part-time labour force. Her results show that in comparison to other labour market states, men and women who work part-time (both voluntarily and involuntarily) are more likely to change their labour market status than individuals in other labour market groups. Men and women classified as involuntary part-time workers were shown to have a relatively high probability of transitioning into full-time employment: about forty percent of women and just less than fifty percent of men, classified as involuntary part-time workers in 1990, changed to full-time labour force status in 1991. In contrast, however, voluntary part-time workers were less likely to move into the full-time labour force, leading Stratton to conclude that individuals classified as involuntary and as voluntary part-time workers exhibited behavior consistent with their preferences.

The results of these studies suggest that part-time workers may be more likely to change labour market status than other groups. In addition, there are likely to be differences in transition probabilities between the voluntary and the involuntary part-time employed. To investigate the labour force attachment of voluntary and involuntary part-time workers in South Africa, the frequency and percentage of women changing labour market status between adjacent periods in the LFS Panel are presented in Table 4.7.

Table 4.7. Transition patterns among women aged 15 years and older: percent and frequency changing labour market status between years t and t+1.

	Year *t + 1*				
Year *t*	Involuntary part-time	Voluntary part-time	Full-time	Unemployed (broad definition)	Economically inactive
Involuntary part-time	172	132	315	235	97
	(18.09)	(13.88)	(33.12)	(24.71)	(10.20)
Voluntary part-time	111	458	799	281	353
	(5.54)	(22.88)	(39.91)	(14.04)	(17.63)
Full-time	254	783	14 728	1 853	1 172
	(1.35)	(4.17)	(78.38)	(9.86)	(6.24)
Broad unemployment	273	310	2 040	15 624	4 507
	(1.20)	(1.36)	(8.97)	(68.66)	(19.81l)
Economically inactive	110	298	992	5 516	30 988
	(0.29)	(0.79)	(2.62)	(14.55)	(81.75)

Source: LFS Panel (September 2001 to March 2004).

Notes: The sample is restricted to women aged 15 years and older. Percentages are in parentheses.

The results on the leading diagonal of Table 4.7 show the frequency and percentage of workers who stayed in their respective labour market statuses. The transition probabilities depict considerable churning in the South African labour market, particularly among those who work part-time. Less than one quarter of voluntary part-time workers, and less than one-fifth of involuntary part-time workers remained in these respective employment states over the adjacent panel waves. Involuntary part-time workers have only limited success in achieving their desire for longer working hours: approximately one-third of part-time workers who indicated that they would like to work more hours transitioned into full-time jobs. An even larger portion (almost forty percent) of voluntary part-time workers reported full-time employment in the following period, however. These findings suggest that voluntary part-time workers find it easier to access full-time employment than the involuntarily underemployed. One possibility is that voluntary part-time employment is transitory. Women may revert to full-time employment following periods of reconciling market work and household responsibilities such as childcare, for example. It is also possible that the kinds of occupations held by voluntary part-time workers may offer greater opportunities for longer working hours.

The precarious and unstable nature of the jobs occupied by involuntarily part-time workers can be seen when considering the movements of workers out of employment

over the waves of the panel. In comparison to voluntary part-time workers, of whom less than one-third reported leaving employment, a greater percentage of involuntary part-time workers (almost 35 percent) exited employment. However, involuntary part-time workers who left employment were more likely to maintain an attachment to the labour market (becoming unemployed) than voluntary part-time workers, who were more likely to leave the labour force. Almost one-quarter of involuntary part-time workers were reported as unemployed in the following period, as compared to only 14 percent of voluntary part-time workers, and approximately 17 percent of voluntary part-time workers exited the labour market as compared to just ten percent of the involuntarily underemployed. These findings on the transition out of employment may suggest differences in commitment to employment between voluntary and involuntary part-time workers, and would be consistent with the results presented earlier which pointed to possible differences also in the direction of selection into these types of employment.

Finally, there is only limited evidence that part-time employment in South Africa provides a successful route out of unemployment, with unemployed individuals being more likely to transition into full-time than into part-time wage employment. While almost nine percent of the unemployed found full-time jobs, only about 2.5 percent of individuals who started off unemployed were able to obtain part-time employment by the next period, and nearly half of these individuals reported working in part-time jobs that offered insufficient working hours. Overall, it appears to be very difficult for individuals without jobs to obtain work in South Africa. Across adjacent panel waves, less than 12 percent of the unemployed were reported to find employment, and nearly seventy percent remained unemployed but willing to accept employment. A further twenty percent of broadly unemployed workers were reported as economically inactive in the next period.

4.4 Concluding comments

This chapter exploits a distinction in the working hours' preferences of female part-time wage workers, differentiating between voluntary part-time workers and the involuntarily underemployed (part-time workers who are reported to want longer working hours).

The results of a descriptive analysis show that there are substantial differences between part-time workers who are content to work part-time and those who desire longer working hours. Involuntary part-time workers typically live in households that provide limited financial security (in terms of having access to other earned income within the household) and these workers also exhibit characteristics that are highly correlated with lower earnings in the labour market, being younger, on average, than voluntary part-time workers and significantly less likely to have completed tertiary education. In addition, part-time workers who want to work more hours are overrepresented in occupations characterised by poor pay, such as domestic work, and in the informal sector. Their jobs are also less likely to offer any long-term security: a significantly greater proportion of involuntary part-time workers are employed in casual or temporary occupations, and these workers are less likely than voluntary part-time workers or the full-time employed to receive benefits.

A multivariate analysis, which tested the correlates of voluntary and involuntary part-time employment, confirmed many of the descriptive findings, and suggested that occupational characteristics in particular, are key correlates of involuntary underemployment. Women who work part-time and who desire longer working hours are significantly more likely than voluntary part-time workers to work in occupations that are insecure and unprotected by unions, and are significantly less likely to have permanent jobs. The multivariate analysis also suggested important differences between voluntary and involuntary part-time workers in terms of their household characteristics. Women living in households with young children were shown to be significantly more likely to choose part-time employment. In addition, although living in a household with employed men increases the probability of voluntary part-time work for women, the presence of unemployed adults in the household lowers this probability.

The descriptive statistics also revealed significant differences in wages between voluntary and involuntary part-time workers. The mean monthly wage of involuntary part-time workers is significantly lower than that for voluntary part-time workers - the result of

working significantly fewer hours, on average, at a lower mean hourly wage. When differences in both individual and job characteristics are controlled for using multivariate analyses, however, a premium to *both* voluntary and involuntary part-time employment is found. The premium to female part-time employment in South Africa is therefore robust to a distinction in working hour preferences among part-time workers. The premium to involuntary part-time employment is also found to be significantly larger than for voluntary part-time work, but only when the estimations control for differences in conditions of work. Furthermore, when fixed effects estimation is used to address the possibility of non-random unobservable differences between voluntary and involuntary part-time workers and the full-time employed, the difference in the estimated wage premiums to voluntary and involuntary part-time employment decreases and is no longer significant. Differences in the direction of selection into voluntary and involuntary part-time employment could account for this result, which would be consistent also with differences in labour market attachment among these workers.

To investigate the labour market attachment of voluntary and involuntary part-time workers, a transition matrix is used in the final part of the chapter. The results correspond, in part, with those from studies of the United States: female part-time workers in South Africa are more likely than other groups to change their labour market status. Unlike in the United States, however, involuntary part-time workers in South Africa are less likely to transition into full-time employment than voluntary part-time workers. Although this finding could suggest that voluntary part-time workers behave in a manner which is inconsistent with their preferences, it is also possible that voluntary part-time work is only a temporary employment state for individuals wanting to maintain an attachment to the labour market while engaging in non-market activities such as childcare. The analysis of labour market transitions also shows that involuntary part-time workers may have a greater attachment to the labour market than voluntary part-time workers. A greater percentage of the involuntarily underemployed who left the labour market were reported as unemployed and willing to accept work in the next period in comparison to voluntary part-time workers, of whom a greater percentage were reported as economically inactive.

The final analytical chapter of this thesis examines the gender wage gap among part-time and full-time salaried workers in post-apartheid South Africa. The chapter explores how the magnitude of the gender wage gap, and the factors contributing to this gap, have changed over time.

Chapter 5

Trends in the gender wage gap and gender discrimination among part-time and full-time workers in post-apartheid South Africa[38]

Investigating and explaining gender wage differentials and gender discrimination is a key area of analysis in the international labour market literature. Extensive research has revealed that women are typically paid less than men, but that the gender wage gap has narrowed over time (Blau and Kahn 1992; 1997; 2000; 2007; Hersch 1991; Bernhardt *et al* 1995; Brainerd 2000; Manning and Robinson 2004). In South Africa, studies documenting gender differences in pay and the effects of gender-based labour market discrimination are more limited, with much of the research focusing rather on racial wage gaps. Using data from the October Household Surveys a few studies have, however, documented evidence of gender discrimination in wages – particularly among Whites and Africans (Rospabé 2001; Hinks 2002 and Grün 2004).

There has been no research on gender wage gaps in South Africa that distinguishes between part-time and full-time employment. This chapter contributes to the small body of literature on gender wage gaps in the country by exploring the gender wage gap, along with changes in this gap, among part-time and full-time wage workers using data from the 1995 and 1999 October Household Surveys and from the 2001 and 2006 September Labour Force Surveys. Differentiating between part-time and full-time workers when considering the gender gap in wages is important, particularly in the context of legislative reforms in South Africa that have occurred since 1994. As a result of their exceedingly poor employment conditions and low pay, unskilled jobs and other occupations traditionally associated with women (domestic work for example), are likely to be specifically influenced by legislation such as the Labour Relations Act of 1995, the Basic Conditions of Employment Act of 1997 and the 1998 Employment Equity Act. The

[38] The results of this chapter have been published in Muller 2009.

descriptive statistics presented in Chapter 3 have shown that domestic work and other unskilled jobs are overrepresented in female part-time employment in South Africa. Any decline in the gender wage gap may therefore be more pronounced among those working part-time.

The next section reviews the various explanations for why a gender gap in wages may be expected and outlines key findings from both the international and the South African literature. Key aspects of selected protective labour market policies, introduced by the South African government since 1995, are also highlighted. In section 5.2, the data utilised in the chapter are briefly discussed and some problems with the comparability of the various data sets are outlined. This section also compares the individual and labour market characteristics of the men and women analysed in each sample. In section 5.3, the estimation and decomposition methods used to compare the returns to employment for men and women are explained and evaluated, and the results are presented. Section 5.4 concludes with a brief review of the findings.

5.1 Context

Gender differences in wages may partly reflect gender differences in skills and qualifications. If women anticipate shorter and more discontinuous working lives because of household commitments, then they may invest less in formal education and on-the-job training than men, and even avoid occupations where human capital investments are required (Mincer and Polacheck 1974). In this case, lower human-capital investments by women[39] will reduce their earnings capabilities relative to those of men. Furthermore, employers who anticipate that women will participate in the labour market intermittently may offer women lower wages (Blau and Kahn 2000).

[39] Women's attainment of human capital may itself be related to discrimination (Peterson and Morgan 1995). This 'pre-entry' discrimination occurs outside of the labour market and can result in women's average productivity being lower than that of men.

Labour market discrimination may also account for part of the gender wage gap. According to Oaxaca (1973:695) "discrimination against females can be said to exist whenever the relative wage of males exceeds the relative wage that would have prevailed if males and females were paid according to the same criteria". Labour market discrimination can manifest in two forms. Job discrimination occurs when women are segregated into occupations/establishments that pay lower wages. This may be the result of either the initial matching of individuals with jobs, and/or with the process through which promotions are obtained once individuals are employed. Women's exclusion from 'male' jobs may culminate in an excess supply of women in 'female' jobs (overcrowding) and lower returns in these occupations. Wage discrimination occurs when, in a given job and within a given establishment, women receive lower wages than men who are equally productive.

Gender differences in skills and occupations, together with labour market discrimination, are typically referred to as the gender specific factors which may account for the wage differential. The wage structure (unrelated to gender) may also influence the magnitude of the gender gap in pay. Blau and Kahn (1997:2) describe the wage structure as "the array of prices set for various labor market skills (measured and unmeasured) and the rents received for employment in particular sectors of the economy". Human capital theory, for instance, predicts that men have more employment experience than women. Therefore, regardless of gender, the higher the return to experience, the larger the gender wage differential will be. Similarly, if discrimination results in women working in different occupations to men, then the higher the return received by workers (both male and female) employed in predominantly male occupations, the larger the gender pay gap (Blau and Kahn 2000).

International evidence on the gender pay gap suggests that although the adjusted gap in wages declines as observable differences between men and women are accounted for, a substantial portion of the pay gap (up to forty percent) remains unexplained and is potentially the result of discrimination (see, for instance, Blau and Kahn 2000). However, many studies, particularly for developed countries, have reported a decline in the

differential over time (Hersch 1991; Wellington 1993; Blau and Kahn 2000). Using data from the Michigan Panel Study of Income Dynamics for 1979 and 1988, Blau and Kahn (1997) show that the gender wage differential in the United States (US) fell by about 0.15 log points, from 0.47 log points in 1979, in spite of changes in the wage structure that adversely affected low-wage earners. According to their study, improvements in gender-specific factors (which resulted in a reduction of the gender wage gap of between 0.22 and 0.26 log points) outweighed the changes in both measured and unmeasured prices (implying an increase in the pay gap of between 0.07 and 0.11 log points) working against women over the period.

More recently, Brainerd (2000) used pre and post reform household survey data from selected formally socialist countries to examine the effect of market reforms on the relative position of working women in these countries.[40] Her findings suggest a narrowing of the gender wage differential of between 0.04 and 0.12 log points in the East European countries analysed. Like for the US, Brainerd attributes the improvement in women's position in these countries to better gender-specific factors and, in particular, to a reduction in gender-based labour market discrimination.

Few studies have examined changes in the gender wage differential among part-time and full-time workers. Using data from 1990 and 1998, Preston (2003) compared the gender earnings gap among part-time and full-time workers in Australia in order to determine the effect of decentralised wage bargaining (adopted in 1991) on the pay position of women. Her results show greater convergence in the part-time gender wage gap than in the full-time gender wage gap, a finding attributed largely to the entry of less qualified and less experienced males into part-time employment.

[40] The countries and periods examined included Hungary (1986 to 1991), Poland (1986 to 1992), the Czech Republic (1984 to 1992) and the Slovak Republic (1984 to 1992).

Only a small number of studies in South Africa have investigated gender wage differentials[41] and none has compared the gender gap in wages among part-time and full-time workers. The available evidence does suggest, however, that having controlled for differences in a range of observable characteristics, women earn less than men. Using data from the 1995 October Household Survey (OHS), Hinks (2002) provides evidence of gender wage gaps among all population groups except Africans. The largest differential is found among the White sample, with White women earning nearly thirty percent less than a non-discriminatory white worker[42] and White men earning approximately 19 percent more. Hinks attributes the absence of a gender differential in wages among the African population group to an under-representation of low-paid female domestic workers in the 1995 sample. Hinks' findings, however, are likely to be biased by the misclassification of domestic workers in the 1995 OHS: in the dataset released by StatsSA, most female domestic workers had been incorrectly classified as self-employed workers. Unless they are explicitly recoded as employees, domestic workers inadvertently will be omitted from an analysis of wage employment (giving the result that the 1995 OHS under-sampled domestic workers). [43]

Using data from the 1999 OHS, Rospabé (2001) finds an overall gender wage gap of about 25 percent, more than half of which cannot be explained by productivity/observable differences between men and women. Within population groups, Rospabé finds that Whites experience the greatest gender wage differential (about 35 percent) and the greatest degree of discrimination (with more than 65 percent of the gap remaining

[41] A number of papers have, however, examined racial wage differentials and discrimination in the South African labour market - see for example Mwabu and Schultz 2000, Erichsen and Wakeford 2001 and Rospabé 2002.

[42] Rather than using the male wage structure for each population group as the non-discriminatory (competitive) wage structure, Hinks (2002) assumes that the total within-population group wage structure is the competitive wage structure.

[43] In earlier estimations of the gender wage gap for this chapter, I also did not include domestic workers who had been misclassified as self-employed in the sample of the wage employed, leading to results similar to those of Hinks (2002) (see Muller 2009).

unexplained). Among Africans the gender wage differential is estimated at 34 percent, with approximately 54 percent of this gap remaining unexplained.

Most recently, Casale and Posel (2009) use data from the September 2003 Labour Force Survey to assess whether unions compress the distribution of wages in South Africa and lower the gender wage gap. Their findings suggest that the gender wage gap among African employees in the union sector may be marginally larger than the gender wage gap among non-unionised workers; a result that can be attributed to occupational segregation by gender among union members. Casale and Posel also recognise that their results could be biased due to incidental truncation, but were unable to obtain consistent estimates of either the size or the direction of the selection bias when using a host of different corrective models.

This chapter extends existing research on gender wage differentials in South Africa, first by considering evidence of gender wage gaps among part-time and full-time workers estimated at particular points in time, and second, by investigating how the gender wage gap within these groups has evolved over the years.[44]

A number of legislative changes occurred in South Africa over the period under consideration in this chapter. These include the introduction of the 1995 Labour Relations Act, which provided guidelines for the resolution of employer/employee disputes and

[44] In an unpublished study, Ntuli (2007) estimates quantile regressions to explore gender wage discrimination among formally employed Africans over the 1995 to 2004 period. Her results reveal that the gender wage gap is typically larger at the bottom of the wage distribution, suggesting the existence of a 'sticky floor' in the South African labour market. In addition, her comparisons of the counterfactual or adjusted wage gaps, estimated at points along the distribution of wages, suggest an increase in the gender wage gap at both the fiftieth and the 75th percentiles from 1995 to 2004, a finding attributed (in part) to highly paid women facing more discrimination over the period. It is important to note, however, that although Ntuli claims to focus on formal employment, it is not possible to differentiate between formally and informally employed wage employees in the 1995 OHS (see Muller and Posel 2004). It is therefore not clear which workers were included in Ntuli's estimating sample in 1995, and her findings may be biased as a result.

secured the rights of workers to unionise, and the 1997 Basic Conditions of Employment Act (BCEA), which aimed to regulate working hours, overtime pay and basic employment conditions, and which also permits the Minister of Labour to determine minimum wages for employees by sector. As mentioned in Chapter 2, such a determination was recently made by the Minister of Labour in 2002, when the BCEA was extended to cover domestic services, and a minimum wage for domestic workers was legislated (Department of Labour 2002). Other legislative additions include the Skills Development Act (SDA) and the Employment Equity Act (EEA) of 1998. The SDA aims to improve the skills of the workforce by raising the level of investment and education in the labour market. Although not specific to addressing racial and gender disadvantages in the labour market, the SDA is linked to the EEA, which compels employers to implement and extend training measures to individuals from previously disadvantaged groups (including women). The EEA also seeks to ensure equal opportunities in the workplace for both men and women by specifically eliminating unfair discrimination in policy and practice and enforcing affirmative action. In addition, the EEA explicitly states that employers should take action to reduce disproportionate income differentials.

The collective implication of these policies should see a reduction of the gender wage gap in South Africa over time as employers increase compliance and strive to reduce gender discrimination in the workplace. The introduction of protective labour legislation is likely to result in an improvement in both working conditions and wages, especially in occupations typically associated with women, such as domestic work and other less-skilled jobs. Because these occupations are overrepresented in female part-time employment in South Africa, the decline in the gender wage differential may be more pronounced among those working part-time. In particular, the introduction of minimum wages for domestic workers in 2002 may have an important impact on the gender wage gap among South Africa's part-time workers over the 2001 to 2006 period.

5.2. Data and descriptive statistics

5.2.1 Data and issues of comparability

This chapter uses data from the 1995 and 1999 October Household Surveys (OHSs) and from the 2001 and 2006 September Labour Force Surveys (LFSs) to investigate the gender wage gap in particular years, as well as to examine changes in the gender wage differential over time. These datasets provide information on the state of the country's labour market both prior to the legislative amendments discussed earlier (in the case of the 1995 OHS and the 2001 LFS) as well as following these changes (in the case of the 1999 OHS and 2006 LFS) and are therefore well-suited to examining variations in gender wage differentials over these periods. Nevertheless, when analysing data obtained from different survey instruments and over different years, comparability concerns arise that must be highlighted.

A general concern about comparability, applicable to all the surveys utilised in this chapter, involves differences in how information is collected over time. As discussed in Chapter 2, over the years, and particularly with the move from the OHSs to the LFSs, Statistics South Africa (StatsSA) has improved the design of the survey instruments, with a view to capturing more information on irregular work. Although these changes may be more likely to influence measures of self-employment (and particularly survivalist and subsistence self-employment), measures of wage employment may also be affected. In particular, because the LFS questionnaires were more comprehensive when defining what constitutes employment, the LFSs are more likely than the OHSs to have captured information on individuals (especially women) involved in work that is marginal and poorly remunerated. To help reduce any bias that may result from analysing the change in the gender wage gap over the period that coincides with the introduction of the LFSs the econometric analysis is divided into two parts: a 1995 and 1999 comparison, and a 2001 and 2006 comparison.

Remaining concerns about comparability stem mostly from the use of the 1995 OHS. The 1995 OHS is the only survey used which fails to distinguish between actual and usual hours worked. In this chapter, *actual* working hours are therefore used to calculate hourly earnings and to distinguish part-time from full-time workers in 1995 and in 1999, while *usual* working hours are used in 2001 and in 2006.[45] The 1995 OHS also fails to capture information on employees' receipt of benefits (such as medical aid and pension fund contributions) and firm size and it does not permit a distinction between wage employees in the formal and informal sectors. As a result, the 1995 and 1999 comparisons exclude variables controlling for these characteristics.

Using data from the 1995 and 1999 OHSs and from the September 2001 and September 2006 LFSs, the following section describes gender differences in individual and occupational characteristics among part-time and full-time wage employees.

5.2.2 Describing part-time and full-time wage employment by gender

Tables 5.1 and 5.2 describe differences in the average characteristics of part-time and full-time workers in each year by gender. The results from all years show that there are a number of clear differences in the characteristics of men and women working part-time: female part-time workers tend to be older than male part-time workers, they are more likely to be white (and less likely to be African), and with the exception of 1999 they are also significantly more likely to live in households where young children also reside. In addition, women working part-time are typically significantly more likely than men to be divorced or widowed.

[45] There is no significant difference (using a 95 percent confidence interval) between the mean actual and usual hours worked by either men or women wage employees in the 1999 OHS or in the LFSs utilised.

Table 5.1. Characteristics of part-time wage employees by gender: 1995-2006.

	1995		1999		2001		2006	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
Mean age	35.96	37.16	35.09	37.11*	35.87	38.89*	38.25	40.13
	(0.45)	(0.34)	(0.47)	(0.38)	(0.72)	(0.51)	(0.95)	(0.55)
Matric or	0.17	0.17	0.20	0.18	0.21	0.15	0.20	0.17
equivalent	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)
Tertiary	0.19	0.21	0.12	0.17	0.14	0.18	0.11	0.17
education	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Married or	0.55	0.60	0.49	0.51	0.49	0.48	0.50	0.50
cohabiting	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)
Widowed or	0.03	0.10*	0.05	0.13*	0.03	0.17*	0.04	0.15*
divorced	(0.00)	(0.01)	(0.00)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Never married	0.40	0.28*	0.45	0.34*	0.46	0.34 *	0.44	0.34
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.03)	(0.02)
White	0.08	0.19*	0.12	0.18*	0.12	0.15	0.09	0.15
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)
African	0.77	0.62*	0.73	0.63*	0.73	0.67	0.77	0.71
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Children younger	0.40	0.48*	0.41	0.43	0.33	0.48*	0.33	0.47*
than seven years	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)
Children aged	0.45	0.51	0.44	0.49	0.36	0.50*	0.34	0.46*
seven to 14 years	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)
Number of observations	815	1 357	824	1 296	541	1 098	545	1 201

Source: OHS 1995 and 1999; September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses.

* indicates that proportions of men and women in each year are significantly different (using a 95 percent confidence interval).

Among the full-time employed a significantly larger proportion of women than men have completed tertiary education in all years. In addition, women are significantly less likely to be married or cohabiting with men, and are more likely to have never been married or to be widowed or divorced. Like women part-time workers, women working full-time are also significantly more likely than men working full-time to live in households where both young children and older children (seven to 14 years of age) reside.[46]

[46] These findings are consistent with those from other studies which show that children are far more likely to live with their mothers than with their fathers (Morrell *et al* 2003). One possible explanation for this is that the majority of 'temporary' labour migrants are men, who leave their household of origin to find work elsewhere and who may leave their children in the care of mothers.

Table 5.2. Characteristics of full-time wage employees by gender: 1995-2006.

	1995		1999		2001		2006	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
Mean age	36.79	35.93*	36.55	35.82*	37.12	36.70	36.77	36.92
	(0.09)	(0.12)	(0.11)	(0.14)	(0.13)	(0.16)	(0.16)	(0.18)
Matric or	0.21	0.23*	0.22	0.24*	0.23	0.25	0.28	0.30
equivalent	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Tertiary education	0.12	0.17*	0.11	0.16*	0.13	0.20*	0.15	0.21*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Married or	0.69	0.53*	0.65	0.48*	0.65	0.48*	0.58	0.46*
cohabiting	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Widowed or	0.03	0.12*	0.03	0.11*	0.03	0.13*	0.03	0.11*
divorced	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Never married	0.27	0.33*	0.30	0.39*	0.30	0.37*	0.38	0.42*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
White	0.17	0.19*	0.15	0.18*	0.15	0.19*	0.13	0.15
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
African	0.66	0.63*	0.68	0.63*	0.67	0.62*	0.72	0.67*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Children younger	0.40	0.44*	0.36	0.40*	0.37	0.43*	0.35	0.43*
than seven years	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Children aged	0.44	0.51*	0.36	0.45*	0.34	0.45*	0.31	0.42*
seven to 14 years	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Number of	15 699	10 051	10 047	6 972	10 623	7 523	10 613	7 496
observations								

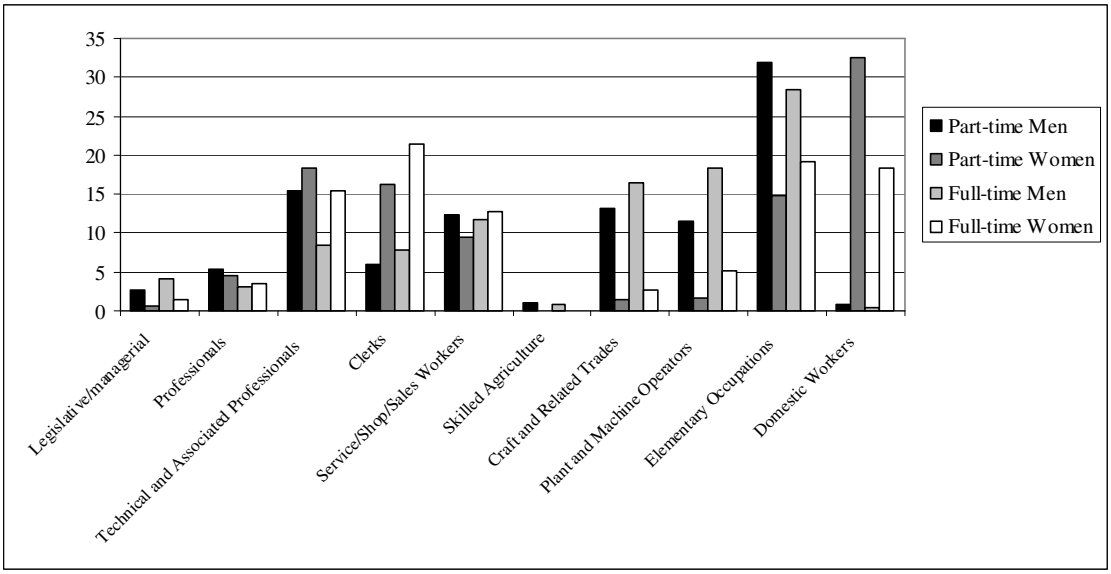
Source: OHS 1995 and 1999; September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses.

* indicates that proportions of men and women in each year are significantly different (using a 95 percent confidence interval).

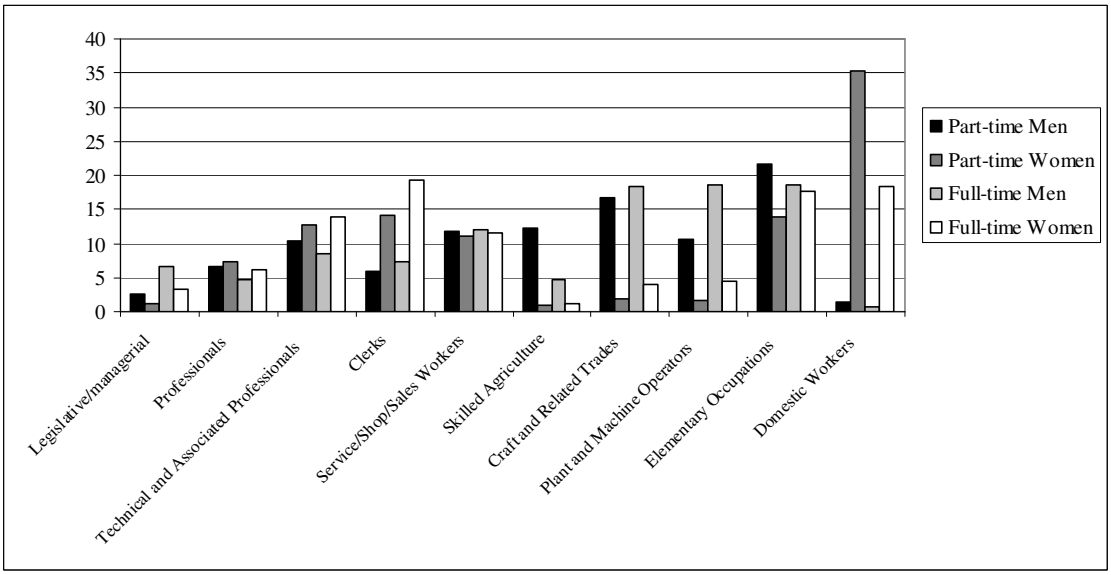
Figures 5.1 to 5.4 show that there are also marked differences in the characteristics of part-time and full-time wage employment by gender in terms of sector of employment and occupational category. In all years, men who work part-time are more likely than women part-time workers to be employed in elementary occupations, as plant and machine operators, and in craft and related trades occupations. For example, between 22 and 45 percent of men in part-time wage employment work in elementary occupations in all years, as compared to only 14 percent of women, on average. In contrast, women working part-time predominate in the domestic services, where more than one-third of women who work fewer than 35 hours a week are employed on average. The results from the 2001 and 2006 data, where it is possible to identify a worker's sector of employment, also show that women working part-time are more likely than men working part-time to be employed in the informal sector.

Figure 5.1. Distribution of part-time and full-time wage employment by occupation and gender, 1995.



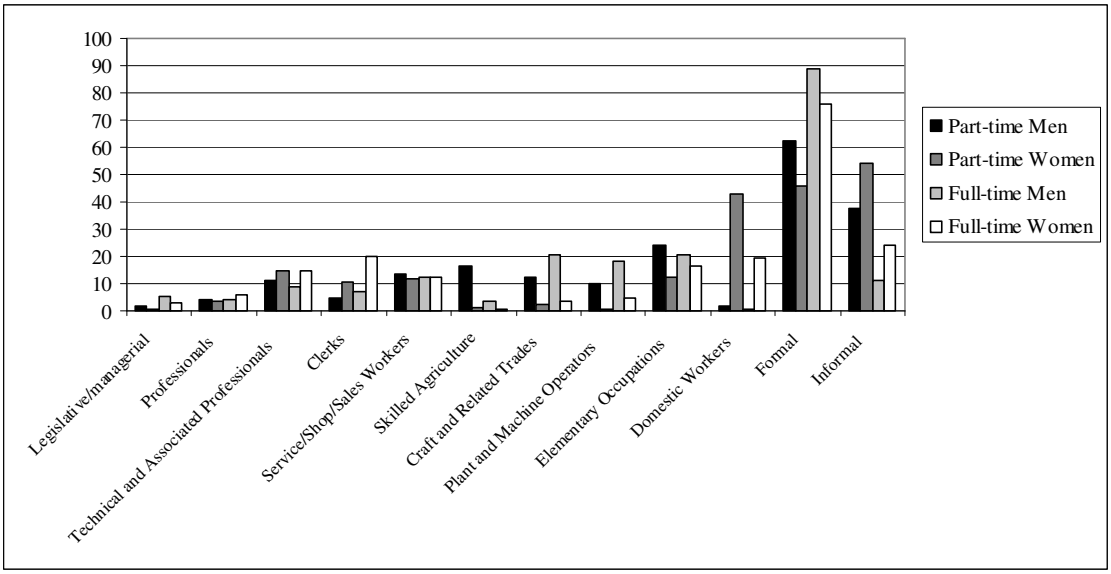
Source: OHS 1995.

Figure 5.2. Distribution of part-time and full-time wage employment by occupation and gender, 1999.



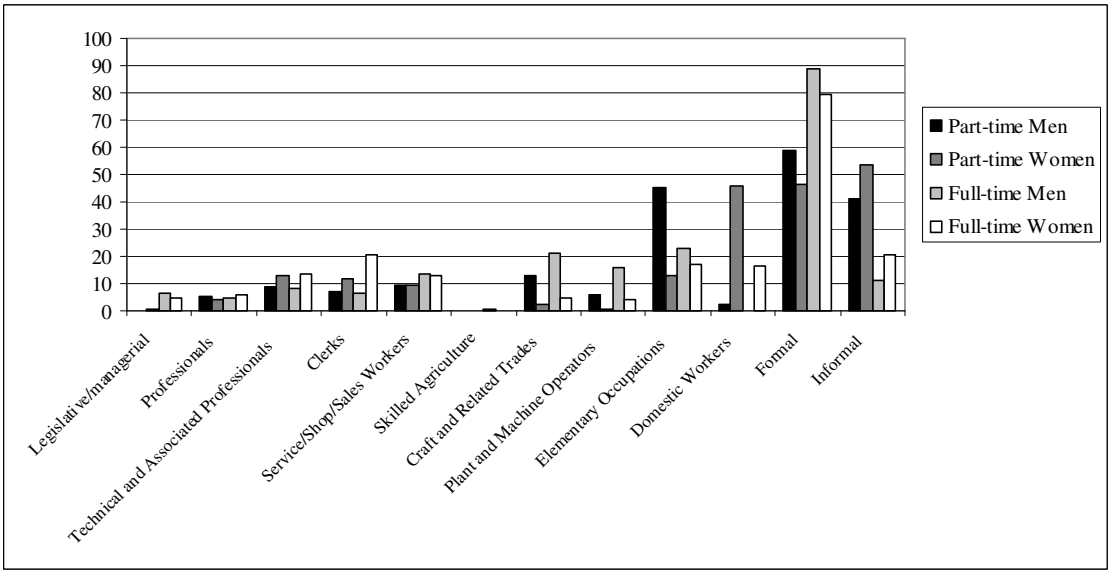
Source: OHS 1999.

Figure 5.3. Distribution of part-time and full-time wage employment by occupation, sector and gender, 2001.



Source: September 2001 LFS.

Figure 5.4. Distribution of part-time and full-time wage employment by occupation, sector and gender, 2006.



Source: September 2006 LFS.

As among the part-time employed, men who work full-time are also more likely than women working full-time to be employed in elementary occupations, as plant and machine operators and in craft and related trades occupations, and the proportion of women who work full-time in the domestic services is greater than the proportion of men working full-time in these occupations. In addition, men in full-time employment are more likely than their female counterparts to work in the formal sector.

Table 5.3 shows differences in the conditions of work experienced by men and women working full-time and part-time. Only estimates for 2001 and 2006 are provided (because the 1995 OHS did not capture this information, a comparison between 1999 and 1995 was not done).

Table 5.3. Conditions of employment among part-time and full-time wage employees by gender: 2001-2006.

	Part-time				**Full-time**			
	2001		**2006**		**2001**		**2006**	
Proportion of all wage employed	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
Written contract	0.28	0.28	0.41	0.43	0.58	0.49*	0.74	0.71*
	(0.02)	(0.02)	(0.03)	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)
Work is temporary or casual	0.56	0.55	0.58	0.53	0.14	0.16	0.20	0.21
	(0.02)	(0.02)	(0.03)	(0.020	(0.00)	(0.00)	(0.00)	(0.00)
Receive pension fund contribution	0.25	0.17	0.20	0.15	0.56	0.47*	0.55	0.50*
	(0.02)	(0.01)	(0.02)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Receive medical insurance contribution	0.15	0.11	0.09	0.07	0.32	0.28*	0.26	0.25
	(0.02)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Receive paid leave	0.26	0.26	0.20	0.29	0.63	0.59*	0.63	0.61
	(0.02)	(0.02)	(0.02)	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)
UIF contribution	0.32	0.27	1	0.99	0.62	0.54*	0.99	0.99
	(0.02)	(0.02)	(0)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Member of a trade union	0.21	0.12*	0.11	0.07	0.39	0.31*	0.33	0.29*
	(0.02)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Number of observations	495	1 022	544	1 195	9 624	6 907	10 452	7 358

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses.

* indicates that proportions of men and women in each year are significantly different (using a 95 percent confidence interval).

Some of the benefits of legislative changes over the period are clearly reflected in the estimates (although these gains do not appear to be disproportionately in favour of the part-time employed). From 2001 to 2006, an increasing proportion of men and women working both part-time and full-time report having written contracts with their

employers, and almost all the wage employed report receiving Unemployment Insurance Fund (UIF) contributions from their employers in 2006 (all male part-time workers reported that their employers contributed to the UIF in 2006). In other respects, however, the conditions of employment faced by South Africa's workers have worsened over time. There has been a fall in the proportions of part-time and full-time workers whose employment is permanent (an exception is among female part-time workers, where the proportion working in temporary or casual employment has declined), and a decreasing proportion of the wage employed report receiving medical aid contributions from employers. Union density, which is significantly lower among the part-time employed, has also fallen among all workers over the years, and particularly among those working part-time.

Table 5.3 also reveals that despite some of the gains made by both men and women in securing better conditions of employment from 2001 to 2006, in both part-time and full-time work women still largely face inferior employment conditions in comparison to men. In 2006, for instance, only seven percent of women working part-time reported receiving medical aid contributions from their employer (compared to nine percent of men working part-time), and among the full-time employed only 47 percent of women reported receiving pension fund contributions, compared to fifty percent of men. In addition, among both part-time and full-time workers, women are less likely to be unionised than men.

Not only are women significantly more likely than men to face poor conditions of employment, but Tables 5.4 and 5.5 show that in all years, and among both the full-time and the part-time employed, women also typically earn less than men on average (in terms of both hourly and monthly wages). The average female-male wage ratio has, however, increased over time among those working full-time, indicative of a narrowing in the (mean) gender gap in hourly wages. This trend is somewhat noisier among part-time workers, rising only slightly from 1995 to 1999, falling from 1999 to 2001, and then increasing substantially from 2001 to 2006. A comparison of both the part-time and the full-time female-male wage ratios from 2001 to 2006 is suggestive of a larger decline in

the gender wage gap among the part-time employed with the increase in the ratio among those working part-time exceeding that among those working full-time.

Table 5.4. Average wages (2000 prices) and working hours among the part-time wage employed by gender, 1995-2006.

	1995		1999		2001		2006	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
Number of observations	874	1 415	852	1 336	590	1 185	572	1 258
Monthly wage (Rands)	2276.03 (115.04)	1809.77 (65.01)	1799.01 (124.19)	1581.88 (190.19)	1654.99 (180.27)	1136.61* (70.69)	1381.48 (104.41)	1457.94 (247.62)
Hours worked	22.57 (0.33)	22.27 (0.24)	18.16 (0.34)	19.99 * (0.26)	21.32 (0.43)	21.59 (0.33)	22.00 (0.55)	22.07 (0.32)
Hourly wages (Rands)	28.21 (2.11)	19.84 (1.07)	28.66 (1.92)	20.30* (1.76)	17.48 (1.49)	11.56* (0.64)	16.10 (1.31)	15.33 (2.60)
Hourly wage ratio (%) (Women/Men)	70.32		70.83		66.13		95.21	

Source: OHS 1995 and 1999; September LFSs: 2001 and 2006.

Notes: Average earnings are in 2000 prices. The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses.

* indicates that means for men and women are significantly different within each year (using a 95 percent confidence interval).

Table 5.5. Average wages (2000 prices) and working hours among the full-time wage employed by gender, 1995-2006.

	1995		1999		2001		2006	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
Number of observations	16 268	10 457	10 405	7 199	10 898	7 755	10 782	7 620
Monthly wage (Rands)	3205.32 (37.82)	2291.48* (29.83)	3355.72 (112.34)	2463.36* (91.95)	2958.25 (73.53)	2313.40* (56.06)	3264.61 (80.17)	2614.99* (72.51)
Hours worked	46.26 (0.08)	43.96* (0.09)	50.00 (0.13)	47.44* (0.14)	49.72 (0.14)	47.24* (0.15)	48.12 (0.15)	45.58* (0.17)
Hourly wages (Rands)	16.23 (0.19)	11.71* (0.15)	16.60 (0.60)	12.80* (0.47)	14.58 (0.35)	12.12* (0.28)	16.54 (0.41)	13.90* (0.38)
Hourly wage ratio (%) (Women/Men)	72.15		77.10		83.12		84.03	

Source: OHS 1995 and 1999; September LFSs: 2001 and 2006.

Notes: Average earnings are in 2000 prices. The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Standard errors are in parentheses.

* indicates that means for men and women are significantly different within each year (using a 95 percent confidence interval).

To investigate the gender gap in wages among part-time and full-time workers further the following section uses multivariate estimations to control for differences in the observed characteristics of men and women.

5.3 Estimating and decomposing the gender gap in wages

5.3.1 Econometric framework

I begin the multivariate analysis by using Ordinary Least Squares (OLS) to estimate separate human capital regressions for men (*M*) and women (*F*) (the process described below is repeated for the respective part-time and full-time samples). For individual *i*, I estimate the following equations:

$$\ln(W_i^M) = \alpha^M + \beta X_i^M + \varepsilon_i^M \quad (5.1)$$

$$\ln(W_i^F) = \alpha^F + \beta X_i^F + \varepsilon_i^F \quad (5.2)$$

W_i represents the real hourly wages of individual i, X_i is a vector of individual, job and industry characteristics, and ε_i is the error term.

I then use the Oaxaca-Blinder (OB) decomposition technique to identify what portion of any wage gap, estimated at each cross section, is due to differences in observable characteristics, and what portion may be the result of differences in the returns to these characteristics.

$$\overline{\ln(W^M)} - \overline{\ln(W^F)} = \sum_i \hat{\beta}^M (\overline{X}_i^M - \overline{X}_i^F) + \{(\hat{\alpha}^M - \hat{\alpha}^F) + \sum_i \overline{X}_i^F (\hat{\beta}^M - \hat{\beta}^F)\} \quad (5.3)$$

The first term of the OB decomposition represents the portion of the wage differential attributable to measurable factors - in this case, to gender differences in endowments. The second term is the 'unexplained' part of the differential, capturing the effects of

differences in the intercepts of the male and female earnings equations and in the estimated coefficients.

Of particular interest in this chapter is whether the magnitude of the gender gap in wages among part-time and full-time workers has risen or fallen over time, and what factors may account for any change observed. When attempting to establish how the gender wage gap, net of differences in observable characteristics, has changed over the years it is not possible simply to compare the magnitudes of the adjusted (residual) differential estimated at each cross-section. This is because the magnitude of the adjusted gender gap in wages depends not only on gender differences in returns, which can change over time, but also upon $\overline{X}_i^F$, which too can change. For example, a decline in the magnitude of the unexplained gap over time could be the result of women's returns improving relative to men's or it could be the result of women's observable characteristics worsening over the years.

In this chapter I use a method developed by Juhn, Murphy and Pierce (1991; 1993)[47] (hereafter JMP) and subsequently implemented by (amongst others) Blau and Kahn (1997) and Brainerd (2004) to decompose the *change* in the gender wage differential from one year to the next. The JMP method also provides a way of illustrating how unobservable differences between men and women affect the gender wage gap.

To start, the male wage equation in period *t* is written as:

$$\ln(W_{Mt}) = X_{Mt}\beta_t + \sigma_t\theta_{Mt} \qquad (5.4)$$

[47] Smith and Welch (1989) propose another way to decompose changes in wage differentials, which is essentially a double application of the Oaxaca-Blinder decomposition. Their approach yields results identical to those of Juhn *et al* (1991; 1993) bar for their decomposition of the change in the residual wage gap, which is instead decomposed into a portion attributable to changes in observable characteristics, and a portion due to changes in returns. See also Heckman *et al* (2000).

where the dependent variable $\ln(W_{Mt})$ is the natural logarithm of real hourly wages, X_{Mt} is a vector of explanatory variables (including the constant) and β is a vector of coefficients. The standard deviation of the residual from the male wage equation is represented by σ_t, and θ_{Mt} is the standardised residual of the male wage regression, with a mean of 0 and a variance of 1. The residual therefore consists of two components: θ_{Mt} reflects the percentile that a particular individual occupies in the residual distribution and σ_t reflects the spread of the residual distribution.

This distinction in the components of the residual is exploited by JMP in their decomposition technique. Following Brainerd (2004:153), the gender wage gap in *t* may be written as:

$$D_t \equiv \ln(W_{Mt}) - \ln(W_{Ft}) = (X_{Mt} - X_{Ft})\beta_t + (\theta_{Mt} - \theta_{Ft})\sigma_t \qquad (5.5)$$

Note that $\theta_{Ft} = \{\ln(W_{Ft}) - X_{Ft}\beta_t\} / \sigma_t$, which reflects the wage that women would earn if their characteristics were rewarded at the same rate as those of men (deflated by the male standardised residual).

The change in the wage gap from *t* to *t'* can then be written as:

$$\begin{aligned} D_{t'} - D_t = {} & [(X_{Mt'} - X_{Mt}) - (X_{Ft'} - X_{Ft})]\beta_{t'} + (X_{Mt} - X_{Ft})(\beta_{t'} - \beta_t) + \\ & [(\theta_{Mt'} - \theta_{Ft'}) - (\theta_{Mt} - \theta_{Ft})]\sigma_{t'} + (\theta_{Mt} - \theta_{Ft})(\sigma_{t'} - \sigma_t) \end{aligned} \qquad (5.6)$$

The first term, typically referred to as the "Observed X's effect", reflects changes in the wage gap that result from changes in gender differences in observed characteristics from *t* to *t'*. The second term, the "Observed prices effect", shows the contribution of changes in the way observed characteristics of men are rewarded in the labour market, holding constant measurable differences between men and women. As Blau and Kahn (1997:7) note, the gender wage gap would rise if, for instance, men's return to experience increased and women have less experience than men. The third term, or the "Gap effect",

represents the contribution of changes in women's position in the male residual distribution. Should women's unobserved labour market skills improve relative to men's, or should labour market discrimination against women decline, they will move up this distribution. Finally, the fourth term, or the "Unobserved prices effect", measures the change in the gender wage gap resulting from the widening (or narrowing) distribution of male wage residuals while holding constant the gender gap in unmeasured skills.

It is possible to aggregate the Observed X's effect and the Gap effect to derive the full-effect of gender-specific differences in observable characteristics and gender differences in wage rankings at a particular level of observed characteristics. Similarly, the Observed and Unobserved prices effects together reflect changes in wage structure, i.e. the result of changing returns to both observed and unobserved characteristics.

It is important to note that the interpretation of both the Observed and Unobserved prices effects may be complicated by the presence of labour market discrimination. If, over time, women are crowded into certain sectors, and relative wages in these sectors are depressed (even for men), then the Observed prices effect may reflect both job discrimination as well as changes in men's rewards for productive characteristics and rents. Furthermore, in the presence of discrimination, the Unobserved prices effect "in part reflects the interaction between year 0's level of discrimination (which pushes women down the distribution of male wage residuals) and the change in the overall level of inequality, which determines how large the penalty is for that lower position in the distribution" (Blau and Kahn 1997:8).

5.3.2 Potential concerns

When estimating (and decomposing) an earnings function for any group it is important to recognise that parameter estimates based solely on a sample of the employed may be biased if the sub-sample is not representative of the entire sample. This could occur, for example, if women (men) working part-time differ not only from those women (men) working full-time, but also from those women (men) who are unemployed or who are

economically inactive. As in studies that investigate the part-time/full-time wage differential, in the gender-wage gap literature the Heckman two-stage procedure is often used to address the sample selection bias problem (Hinks 2002; Grün 2004). Obtaining exclusion restrictions that are not also correlated with earnings can be problematic and in the data used in this chapter it was impossible to find such instruments. The sample selection problem is further exacerbated by the need to also account for the possibility that part-time and full-time workers differ in terms of both measurable and unmeasured characteristics. Although data from the LFS Panel could be used to address the issue of sample selection between part-time and full-time workers (as in the previous Chapters), because gender remains fixed over time, the effect of gender on any change in earnings would be eliminated with the within-transformation of the data.

Not only are issues of selectivity likely to pose a problem at each cross-section, but they may also affect the measurement of the change in the gender wage gap over time. In recent years, women's labour force participation has increased rapidly, with research suggesting that women have been pushed, rather than pulled into the labour market (Casale and Posel 2002; Casale 2003). Consequent changes in the unmeasured selectivity of female labour force participants over the years may bias the measurement of the change in the gender wage gap. Male labour force participation in South Africa has, however, been significantly more stable than female labour force participation and parameter estimates from the male wage equation should be less susceptible to bias introduced by changes in men's unobservable characteristics over time. This chapter therefore uses the male earnings function, rather than the female, or a pooled, wage equation as the reference category when performing the decompositions.

Another potential concern is that the male and female earnings equations are estimated and decomposed without restricting the comparison to only those individuals whose characteristics are comparable. This problem is typically referred to as a failure to recognise "*gender differences in the supports*" (Ñopo 2008), and may result in either an underestimation or an overestimation of the portion of the gap attributable to differences

in the returns to individual characteristics.[48] One possible solution can be found in the program evaluation literature where gender is considered as a treatment and matching is used to select sub-samples of men and women with identical observable characteristics (see, for example, Ñopo 2008). While such a non-parametric procedure may assist in solving the 'gender differences in supports' problem and is also useful for exploring the distribution of unexplained differences in wages, it is limited in its ability to control for the many explanatory factors that may influence earnings and earnings differences and is therefore not utilised here.

5.3.3 Results[49]

Tables 5.6 and 5.7 show the decomposition results from 1995 to 1999 for the separate samples of part-time and full-time wage workers, while Tables 5.8 and 5.9 provide decomposition results for the part-time and full-time samples from 2001 to 2006. The first column (I) in each table presents results where controls for age, job duration, race, education, marital status and location were included, while in the second column (II), variables controlling for occupation, industry and firm size are added. The additional column (III) in Tables 9 and 10 includes further controls for conditions of employment and also distinguishes between employment in the formal and informal sectors.

In all the years and among both part-time and full-time workers the total gender gap in wages is estimated to be positive, implying a wage differential in favour of men.

[48] An overestimation (underestimation) of the unexplained wage gap would occur if matched males (i.e. men for whom it is possible to find women with comparable characteristics) typically have wages which are, on average, lower (higher) than those for unmatched males. See Ñopo 2008 for further details.

[49] Detailed regression output for all estimations is provided in Appendix C.

Table 5.6. Decomposition of the gender wage differential, 1995 to 1999 (Part-time wage employed).

	I				II			
	1995		1999		1995		1999	
	Men	Women	Men	Women	Men	Women	Men	Women
Number of observations	799	1 341	811	1 268	775	1 322	765	1 216
R-squared	0.30	0.51	0.34	0.44	0.48	0.79	0.45	0.52
Total (unadjusted differential)	0.841		0.430		0.844		0.402	
Quantity effect	-0.104 (-12)		-0.116 (-27)		0.722 (86)		0.282 (70)	
Residual gap	0.945 (112)		0.546 (127)		0.121 (14)		0.120 (30)	
Change in total differential	-0.411				-0.441			
Change in quantity effect	-0.011 (3)				-0.440 (99)			
Change in residual gap	-0.399 (97)				-0.001 (1)			
Observed X's effect	-0.016 (4)				0.006 (-1)			
Observed prices	0.004 (-1)				-0.447 (101)			
Gap effect	-0.457 (110)				-0.007 (2)			
Unobserved prices effect	0.057 (-13)				0.006 (-1)			

Table 5.7. Decomposition of the gender wage differential, 1995 to 1999 (Full-time wage employed).

	I				II			
	1995		1999		1995		1999	
	Men	Women	Men	Women	Men	Women	Men	Women
Number of observations	15 479	9 965	9 858	6 852	15 152	9 822	9 209	6 470
R-squared	0.59	0.59	0.50	0.56	0.72	0.82	0.60	0.66
Total (unadjusted differential)	0.380		0.244		0.380		0.239	
Quantity effect	-0.056 (-15)		-0.050 (-21)		0.214 (56)		0.039 (16)	
Residual gap	0.437 (115)		0.295 (121)		0.166 (44)		0.200 (84)	
Change in total differential	-0.135				-0.141			
Change in quantity effect	0.006 (-4)				-0.174 (123)			
Change in residual gap	-0.141 (104)				0.033 (-23)			
Observed X's effect	-0.017 (13)				0.067 (-48)			
Observed prices	0.023 (-17)				-0.241 (170)			
Gap effect	-0.175 (129)				0.000 (0)			
Unobserved prices effect	0.033 (-24)				0.033 (-23)			

Source: OHS 1995 and 1999.

Notes (Tables 5.6 and 5.7): The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Estimates as a percentage of the unadjusted differential or the change in the unadjusted differential are in parentheses. Percentages may not sum to 100 due to rounding.

Table 5.8. Decomposition of the gender wage differential, 2001 to 2006 (Part-time employed).

	I				II				III			
	2001		2006		2001		2006		2001		2006	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Number of observations	541	1 098	550	1 206	529	1 081	548	1 203	483	991	539	1 186
R-squared	0.40	0.58	0.38	0.60	0.54	0.64	0.54	0.67	0.62	0.67	0.58	0.68
Total (unadjusted differential)	0.367		0.234		0.345		0.235		0.347		0.222	
Quantity effect	-0.037 (-10)		-0.063 (-26)		0.020 (6)		0.149 (63)		-0.001 (0)		0.188 (85)	
Residual gap	0.405 (110)		0.297 (126)		0.325 (94)		0.085 (36)		0.349 (100)		0.034 (15)	
Change in total differential	-0.133				-0.110				-0.124			
Change in quantity effect	-0.025 (20)				0.129 (-117)				0.189 (-152)			
Change in residual gap	-0.107 (80)				-0.239 (217)				-0.314 (253)			
Observed X's effect	-0.102 (77)				-0.149 (135)				-0.219 (176)			
Observed prices	0.076 (-57)				0.278 (-253)				0.409 (-329)			
Gap effect	-0.062 (47)				-0.215 (195)				-0.306 (246)			
Unobserved prices	-0.044 (33)				-0.023 (21)				-0.007 (6)			

Table 5.9. Decomposition of the gender wage differential, 2001 to 2006 (Full-time employed).

	I				II				III			
	2001		2006		2001		2006		2001		2006	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Number of observations	10 623	7 523	10 664	7 520	10 220	7 332	10 555	7 450	9 311	6 739	10 322	7 303
R-squared	0.56	0.64	0.53	0.59	0.68	0.74	0.62	0.69	0.72	0.77	0.67	0.73
Total (unadjusted differential)	0.194		0.162		0.200		0.160		0.202		0.162	
Quantity effect	-0.105 (-54)		-0.085 (-52)		0.008 (4)		-0.020 (-13)		0.020 (10)		0.006 (4)	
Residual gap	0.299 (154)		0.247 (152)		0.192 (96)		0.181(113)		0.182 (90)		0.156 (96)	
Change in total differential	-0.032				-0.040				-0.039			
Change in quantity effect	0.019 (-59)				-0.029 (73)				-0.013 (33)			
Change in residual gap	-0.051(159)				-0.010 (25)				-0.025 (64)			
Observed X's effect	0.012 (-38)				-0.019 (48)				-0.016 (41)			
Observed prices	0.007 (-22)				-0.010 (25)				0.002 (-5)			
Gap effect	-0.049 (153)				-0.018 (45)				-0.030 (76)			
Unobserved prices	-0.002 (6)				0.007 (-18)				0.004 (-10)			

Source: September LFSs: 2001 and 2006.

Notes (Tables 5.8 and 5.9)*:* The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Estimates as a percentage of the unadjusted differential or the change in the unadjusted differential are in parentheses. Percentages may not sum to 100 due to rounding.

In both periods the gender gap in wages persists among the part-time and the full-time cohorts when observable differences between workers are accounted for (although in some specifications the adjusted wage differential is lower than the unadjusted wage gap). In all years, the inclusion of controls for occupation and industry in specification II decreases the magnitude of residual (unexplained) portion of the wage gap for both part-time and full-time workers, indicating that gender differences in occupational access account for a substantial portion of the gender wage gap. In 2001 and 2006, controlling for differences also in conditions of work (see specification III) further reduces the magnitude of the residual gender wage gap among both part-time and full-time workers (an exception is in 2001, where the adjusted wage gap increases slightly from specification II to specification III for part-time workers).

The cross-sectional decomposition results also show that, in all years and in all specifications, the magnitude of the unadjusted gender gap in wages is greater among part-time than among full-time workers. These results may seem surprising given the evidence presented in previous chapters of a premium to female part-time wage employment in South Africa. However, the premium to men's part-time work is even larger than that for women (see Appendix A for these estimation results).

When the wage estimations control for gender differences in observable characteristics (including occupation and industry in 1999, as well as conditions of work in 2006), the residual gap among the full-time employed in these years exceeds that estimated among the part-time employed. This is potentially indicative of a greater reduction in wage-based gender discrimination among part-time than among full-time workers from 1995 to 1999, and from 2001 to 2006. To explore these findings further, the JMP technique is used to decompose the change in the gender wage gap over these years.

The decomposition results for 1995 to 1999 point to a decline in the gender wage gap over the period of between 0.411 and 0.441 log points for part-time workers and between 0.135 and 0.141 log points for full-time workers. This suggests that the decline in the gender wage gap over these years was greater among part-time than among full-time

workers. Similar results are found for 2001 to 2006: among part-time wage workers the gender wage gap decreased by approximately 0.12 log points (roughly 35 percent, on average), and far exceeded the magnitude of the decline in the wage gap among those working full-time, which ranged between 0.032 and 0.040 log points (or 16 and twenty percent).

The JMP decomposition makes it possible to identify the main sources of the narrowing of the gender wage gap over each period and within each group. For both part-time and full-time workers over the 1995 to 1999 period, the results of the JMP decomposition for the first specification (i.e. when controls for occupation and industry are omitted) suggest that the primary source of the decline in the gender wage gap is the result of gender specific factors, in particular the Gap effect. The Gap effect, which measures the contribution of changes in discrimination to the change in any wage gap, contributed more than 100 percent to the decline in the unadjusted gender wage differential over the period. However, when the wage estimations reflect the gender wage gap calculated for women involved in the same occupations and industries as men, the importance of gender specific factors and the Gap effect is greatly diminished. In the full specification it is an improving wage structure, and specifically the Observed prices effect, which is the primary source of the decline in the total gender wage gap for both part-time and full-time workers, reducing the gender wage gap by 0.447 log points (101 percent) for part-time workers and by 0.241 log points (170 percent) for full-time workers. The Observed prices effect suggests that changes in the prices of skills and/or rents for men have worked to decrease the gender wage gap over the period. This result is consistent with the introduction of protective labour legislation over the period (and with the implementation of the Employment Equity Act, in particular), which may have served to decrease the demand for male workers, thereby lowering the returns received by men for their productive characteristics.

For the 2001 to 2006 period, the results of the JMP decomposition for part-time workers shows that between 77 (specification I) and 176 percent (specification III) of the reduction in the total gender wage gap among part-time workers can be attributed to an

improvement in women's observable characteristics (the Observed Xs effect). In all specifications, the negative sign on the Gap effect shows that women's position in the residual male wage distribution improved over the period[50], indicative of a decline in discrimination against women in the labour market and/or improvements in women's levels of unobserved skills relative to men's. Taken together, the Observed X's and Gap effect reinforce each other and reveal an overall improvement in gender-specific factors for women working part-time, accounting for between 123 (specification I) and 423 percent (specification III) of the change in the unadjusted wage gap over time.

While these improvements in gender specific factors worked to reduce the overall gender gap in wages among those working part-time, a deteriorating wage structure worked to increase this gap. This is indicated, in part, by the positive signs observed on the Observed prices effects. In contrast to the 1995 to 1999 period, the Observed prices effect shows that the prices of skills or rents have changed from 2001 to 2006 so as to *increase* the male-female wage gap among part-time workers in South Africa. This finding may also reflect increased occupational crowding among women working part-time. As a result, despite women's position in the part-time male residual wage distribution typically improving from 2001 to 2006 (as shown by the negative sign on the Unobserved prices effect in all three specifications), the overall widening of the part-time wage distribution over the period offset the gains made in gender-specific factors by between 0.03 and 0.4 log points.

Among full-time employees the results of the decomposition of the change in the gender wage gap from 2001 to 2006 over time are similar to those among part-time workers. Gender specific factors are shown to account for between about 93 and 117 percent of the reduction in the total gender wage differential among full-time workers, with a worsening wage structure offsetting some of these gains. Overall, however, a far greater improvement in gender specific factors is to be found among those working part-time than among those working full-time. In particular, the contribution of the Gap effect

[50] Put differently, the negative sign on the Gap effect shows that having controlled for observed characteristics the wage position of women relative to that of men improved.

(which illustrates changes in discrimination and/or unobservable characteristics) to the reduction of the gender wage differential is larger among those working part-time, where it accounts for more than 190 percent of the decline in specifications II and III, than among the full-time wage employed, where it accounts for less than 80 percent of the decline in these specifications. This finding is consistent with improvements in labour legislation impacting particularly upon part-time workers, and where a reduction in discrimination may be greater than among those working full-time. It is possible, though, that this result is also capturing the effects of potentially larger improvements in the unobservable characteristics of women working part-time as compared to those of women working full-time over the period.

Given the introduction of a minimum wage for domestic workers in 2002 it important to investigate whether the findings reported for 2001 to 2006 are applicable also to those not involved in the domestic services. Estimates of the gender wage gap and decompositions *excluding* domestic workers are shown in Tables 5.10 and 5.11 (the estimations use controls identical to those used in the results shown for Tables 5.8 and 5.9).

In contrast to the previous findings which showed a positive unadjusted gender wage gap for part-time and full-time workers, the removal of domestic workers from both the part-time and full-time samples in 2001 and 2006 results in a total gender gap in wages that is negative in all specifications, and in all years, suggesting a gender wage gap in favour of women. Domestic workers, most of whom are women, typically have few skills and are poorly paid, and so these reductions in the unadjusted gender wage gap are not unexpected. Controlling for observable differences among these workers, however, women earn less than men in all the years and in all specifications, which is consistent with the findings presented that included domestic workers.

Table 5.10. Decomposition of the gender wage differential, 2001 to 2006 (Part-time employed - domestic workers excluded).

	I				II				III			
	2001		2006		2001		2006		2001		2006	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Number of observations	525	531	538	589	513	521	536	587	468	463	527	577
R-squared	0.39	0.53	0.39	0.61	0.54	0.59	0.55	0.68	0.62	0.66	0.58	0.70
Total (unadjusted differential)	-0.182		-0.249		-0.208		-0.251		-0.228		-0.271	
Quantity effect	-0.429 (236)		-0.394 (158)		-0.435 (209)		-0.434 (173)		-0.488 (214)		-0.407 (150)	
Residual gap	0.246 (-136)		0.145 (58)		0.226 (-109)		0.183 (-73)		0.260 (-114)		0.136 (-50)	
Change in total differential	-0.067				-0.042				-0.042			
Change in quantity effect	0.034 (-51)				0.000 (0)				0.081(-193)			
Change in residual gap	-0.101 (151)				-0.043 (100)				-0.124 (295)			
Observed X's effect	-0.040 (59)				-0.139 (331)				-0.218 (519)			
Observed prices	0.074 (-110)				0.140 (-333)				0.299 (-712)			
Gap effect	-0.070 (104)				-0.006 (14)				-0.104 (248)			
Unobserved prices	-0.031 (46)				-0.036 (86)				-0.019 (45)			

Table 5.11. Decomposition of the gender wage differential, 2001 to 2006 (Full-time employed - domestic workers excluded).

	I				II				III			
	2001		2006		2001		2006		2001		2006	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Number of observations	10 571	5 731	10 639	6 074	10 170	5 554	10 530	6 011	9 262	5 066	10 297	5 894
R-squared	0.56	0.60	0.53	0.55	0.68	0.68	0.62	0.65	0.72	0.71	0.67	0.69
Total (unadjusted differential)	-0.095		-0.047		-0.096		-0.051		-0.110		-0.051	
Quantity effect	-0.278 (293)		-0.211(449)		-0.290 (302)		-0.224 (439)		-0.291 (265)		-0.197 (386)	
Residual gap	0.182 (192)		0.163 (-346)		0.194 (-202)		0.173 (339)		0.180 (-164)		0.145 (-285)	
Change in total differential	0.048				0.044				0.058			
Change in quantity effect	0.067 (140)				0.065 (148)				0.093 (160)			
Change in residual gap	-0.019 (-40)				-0.021 (-48)				-0.035 (60)			
Observed X's effect	0.054 (113)				0.037 (84)				0.058 (100)			
Observed prices	0.012 (25)				0.028 (64)				0.035 (60)			
Gap effect	-0.018 (-37)				-0.028 (-64)				-0.039 (-67)			
Unobserved prices	-0.001 (-2)				0.006 (14)				0.004 (7)			

Source: September LFSs: 2001 and 2006.

Notes (Tables 5.10 and 5.11)*:* The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Estimates as a percentage of the unadjusted differential or the change in the unadjusted differential are in parentheses. Percentages may not sum to 100 due to rounding.

Among part-time workers, the total gender gap in wages becomes increasingly negative from 2001 to 2006 in all three specifications – suggesting that women's wage advantage has risen relative to men's over this period. Among full-time workers, however, the opposite has occurred, with the positive change in the (negative) unadjusted wage gap between men and women indicative of women's advantage declining relative to that of men. Although changes in the unadjusted gender wage gaps move in opposite directions for part-time and full-time workers, the results do support the earlier findings of a greater reduction in the gender wage gap among part-time workers.

As before, the JMP decomposition technique can be used to identify the primary source of the change in the total gender wage gap over the years for both part-time and full-time workers. Of key interest here is whether and how changes in gender discrimination have affected the change in the total gender wage gap observed among both part-time and full-time workers with domestic workers removed from the sample.

For part-time workers the Gap effect, which may reflect the contribution of changes in discrimination to the change in the gender wage differential, is negative in all three specifications. This would suggest a decline in gender discrimination, and points to the possibility that the impact of legislative improvements extends beyond minimum wage legislation for domestic workers. Overall, improvements in gender specific factors (with women's observable characteristics improving relative to those of men in particular) are the primary source of the decline in the total gender wage gap among part-time workers, however. Gender specific factors (shown by the addition of the Observed Xs and Gap effects) account for between 164 (specification I) and 766 (specification III) percent of women's gains over the period, with a worsening wage structure (the addition of the Observed prices and Unobserved prices effects) offsetting these gains.

Among full-time workers, the Gap effect is negative in all three specifications, suggesting that discrimination against women may have declined over the period. Despite the positive impact that a reduction in discrimination would have had upon the gender wage gap, women's average wage advantage over men decreased from 2001 to 2006 among

non-domestic full-time workers, however. The primary source of this decline is shown by the Observed Xs component of the JMP decomposition, with the deterioration in women's observed characteristics relative to those of men contributing between 84 and 113 percent to the reduction in women's advantage relative to that of men. In addition, a worsening wage structure, shown by the positive signs on the observed and unobserved prices effects in specifications II and III in particular, worked to offset any of the gains women may have encountered from a reduction in discrimination.

5.4 Concluding comments

Few studies of the gender wage gap in South Africa have investigated changes in gender wage differentials over time, and none have distinguished between part-time and full-time employment. The results of this chapter provide evidence of a gender gap in wages in South Africa that is considerably higher among part-time wage employees than among those working full-time.

To investigate the change in the gender wage gap in post-apartheid South Africa the analysis distinguished between two periods: 1995 to 1999; and 2001 to 2006. These two periods are well suited to an analysis of changes in the gender wage gap as they provide information on the South African labour market both prior to and following the implementation of a series of legislative changes targeted specifically at improving women's access to jobs and their pay. In addition, the separation of the analysis into these two periods helps to avoid any bias that may result from the changeover in survey instruments from 1999 to 2000.

The results from 1995 to 1999 as well as from 2001 to 2006 show that the gender gap in wages is typically higher among part-time than among full-time workers. Over time, however, the gender gap in wages has narrowed. Moreover, the decline in the total gender wage differential over both periods has been more pronounced among part-time than among full-time workers.

Identifying the primary source of the decline in the gender wage differential over time is complicated by the inability to account for various sources of potential selectivity bias. Nevertheless, from 1995 to 1999, the results from the full specification of the wage equations point to an improvement in the structure of wages (stemming from the Observed prices effect) that served to decrease the gender wage gap among both part-time and full-time workers. This finding points to a possible reduction in the demand for male workers following the introduction of legislation aimed at improving women's access to employment, working conditions and pay, which may have worked to decrease the returns to men's characteristics over the period.

In contrast, the results from 2001 to 2006 suggest that the decline in the gender wage differential is the consequence mainly of improvements in gender-specific factors. In particular, the magnitude of the Gap effect, which may reflect changes in discrimination and/or unobservable characteristics, is larger among those employed in part-time jobs. Although there is descriptive evidence suggesting that certain employment benefits (such as medical aid and pension fund contributions) have been lost by workers over the years as others (like contributions to the unemployment insurance fund) have been gained, this finding is consistent with employer's increasing compliance with the legislative changes implemented over the period. These findings are robust also to the exclusion of domestic workers from the sample of analysis, suggesting that the positive effects of changes in labour legislation have extended beyond the domestic services sector.

Chapter 6

Summary of findings and concluding comments

A significant portion of the international labour market literature has been devoted to studies of part-time employment. Researchers have been concerned primarily with explaining trends in part-time employment, with identifying who works part-time and why, and with exploring the consequences of part-time employment for the individuals employed in part-time jobs. A few studies have also recognised that there may be important differences among part-time workers: some part-time workers choose to work less than full-time and are therefore employed part-time voluntarily; others (involuntary part-time workers or the involuntarily underemployed) may prefer longer working hours. However, in spite of the wealth of South African labour market data available permitting a distinction both between part-time and full-time workers, and among those who work part-time, research investigating the part-time labour market, and the individuals who work part-time, is limited. This thesis attempts to redress this lacuna, making use of data from national household surveys (namely the October Household Surveys (OHS) and the Labour Force Surveys (LFS)) conducted by South Africa's official data collection agency, Statistics South Africa (StatsSA) from 1995 to 2006.

Many studies have shown that part-time employment is an important component of the growth in women's work globally, permitting women to reconcile paid employment with their household responsibilities, such as child care. When differentiating among the part-time employed, researchers typically find that although voluntary part-time employment is more prevalent than involuntary part-time employment, the number of part-time workers desiring longer working hours has increased over time. The analysis of trends in total and in part-time employment among men and women in Chapter 2 shows that in South Africa, women have become increasingly overrepresented in part-time wage employment, and in 2006, they comprised more than two-thirds of the salaried part-time workforce. In addition, the growth in women's part-time wage employment accounted for

nearly one-fifth of the rise in women's total employment over the post-apartheid period. These findings are consistent with those from other countries, and suggest that the expansion in part-time employment among women has been an important part of the documented rise in women's labour market participation in South Africa. When differentiating among part-time workers, the results show that in South Africa, as in other countries, the number of individuals who choose to work part-time exceeds those who do so involuntarily (and particularly among women). In contrast to other countries, however, involuntary part-time employment in South Africa has remained quite stable despite rising levels of unemployment over the years.

It is important to recognise that the identification of reliable trends in employment, and in part-time employment specifically, could be compromised by the use of different survey instruments. In an attempt to refine measures of employment and unemployment, and to ensure that employment information is collected on individuals involved even in the most marginal of work activities, StatsSA replaced the OHSs with the LFSs in 2000. With the new surveys providing more comprehensive guidelines than their predecessors regarding what constitutes work, measures of employment, and of part-time work specifically, are likely to be affected. As a result it is possible that some (unknown) portion of the documented changes in total and in part-time employment in South Africa described in this thesis is the consequence of improvements in data collection.

In addition to establishing the incidence of part-time employment, and to identifying trends in part-time work, one of the key research questions dominating the part-time employment literature concerns the analysis of wage differentials between part-time and full-time workers. Among women in particular, numerous studies have identified a wage penalty to part-time employment and have attempted to establish what portion of the wage gap between part-time and full-time workers can be explained by differences in their individual, household and occupational characteristics. In general, the analysis of wage gaps is complicated by the possibility that non-random differences in unobservable characteristics exist between groups of workers. This problem is typically referred to as a 'selection bias', and failure to account for differences in unobservable characteristics

between groups could cause estimates of the wage gap calculated by Ordinary Least Squares (OLS) to be over- or understated, depending on the direction of the selection effect. For example, an estimated penalty to part-time employment may be overstated if there is negative selection into part-time employment, i.e. if part-time workers are less able or less committed to employment than full-time workers.

To account for the problems of selection bias arising in the analysis of wage gaps, researchers who are constrained to use cross-sectional data typically utilise Heckman's two-step correction procedure, while those with access to panel data implement fixed effects estimations. Rather than use the Heckman procedure, for which it is difficult to identify instruments correlated with part-time employment status but not the wage, this thesis uses data from the September 2001 to March 2004 LFS Panel where possible to address the problem of unobserved hetereogeneity in the samples of the wage employed.

The descriptive statistics presented in Chapter 3, which were calculated using data from the September 2003 LFS, revealed that although part-time wage workers earn significantly less per month, on average, than full-time workers, their mean hourly wage is only slightly lower than that of full-time workers and this difference is not significant. There are many significant differences in the correlates of part-time and full-time employment, however, that are likely to account for part of the difference in wages between these groups. In particular, the descriptive analysis showed that female part-time workers have significantly lower levels of education than female full-time workers (lower levels of education are often associated with lower earnings in the South African labour market). Part-time workers are also less likely than full-time workers to be employed in occupations associated with high wages, such as the professional and managerial jobs, and are significantly less likely than full-time workers to have permanent employment or to receive benefits.

To control for these differences in observable characteristics between part-time and full-time workers, multivariate estimation techniques were used. OLS estimates of the wage gap between female part-time and full-time wage workers in South Africa, calculated

using pooled data from the original LFS cross-sections from September 2001 to March 2004, revealed a substantial and significant *premium* to female part-time employment. When the sample of part-time and full-time workers was pooled, and a dummy variable used to distinguish part-time and full-time wage workers, the premium to female part-time employment was estimated at between 29 and sixty percent, depending on the controls utilised. Oaxaca-Blinder estimates of the wage gap between part-time and full-time wage workers, which recognise the possibility also of differences in the returns to observable characteristics between these groups, were lower, at between twenty and 42 percent.

To address the possibility that these estimates were biased as a result of not accounting for selection into part-time and full-time employment, fixed effects regressions were estimated using data from the LFS Panel. By assuming that individuals' unobservable characteristics are time-invariant, it was possible to difference out the unobserved effect, thereby eliminating the bias introduced by unobserved individual hetereogeneity.

The results presented in Chapter 3 showed that the premium to female part-time employment in South Africa estimated using fixed-effects regression was higher than the premium estimated by OLS when the waves of the panel were pooled. This finding confirmed that not only is the part-time employment premium in South Africa robust to controlling for non-random differences between part-time workers and full-time workers in both observable and unobservable characteristics, but that there is also evidence of negative selection into part-time employment. In addition, a premium to female part-time employment was estimated consistently when a number of checks were conducted, which included redefining part-time employment, excluding domestic workers from the estimating sample, and adjusting for possible mis-reporting in hours worked. Evidence of a premium to female part-time employment is consistent with minimum wage determinations in South Africa, which, in many sectors, often stipulate a higher wage for individuals working the fewest hours.

One econometric problem that could not be addressed, and that may cause the fixed effects estimates of the part-time employment to be overstated, is the possibility of simultaneity bias. It was impossible to identify an instrumental variable(s) correlated with the change in part-time employment status and exogenous to the wage equation with which to control for the possible endogeneity in part-time employment status.

Chapter 4 of this thesis exploited the distinction among part-time workers. The chapter first used data from the September 2003 LFS to explore descriptively the differences between women who choose to work less than full-time and those who work part-time involuntarily. Studies that recognise differences in the preferences for additional working hours among part-time workers typically find important differences in individual characteristics between voluntary and involuntary part-time workers, as well as differences in the types and quality of jobs.

The results showed that similar differences exist between voluntary and involuntary part-time workers in South Africa. In particular, part-time workers who desire longer working hours were found to be younger, on average, than voluntary part-time workers, and less likely to have completed any tertiary studies. There were also significant differences between voluntary and involuntary part-time workers in terms of their household characteristics, with the results suggesting that limited financial security within the household may be a factor driving some part-time workers to want longer working hours. In addition, involuntary part-time workers were more likely than part-time workers who are content with their working hours to work in jobs associated with poor remuneration, such as domestic work, and also reported receiving significantly fewer benefits.

Multivariate analysis of the correlates of involuntary and voluntary part-time employment, which used pooled data from the full LFS cross-sections from September 2001 to March 2004, confirmed these descriptive findings. Probit estimates of the probability of involuntary versus voluntary part-time work revealed that individual characteristics (such as age, education and job duration) as well as household characteristics (such as the number of employed men in the household, and the number of

unemployed adults in the household) are key factors influencing whether or not part-time workers are reported to want longer working hours. The results also showed that involuntary part-time workers are significantly less likely to work in permanent jobs or in employment that offers union protection.

In addition to recognising key differences in the individual, household and job characteristics of voluntary and involuntary part-time workers, the analysis presented in Chapter 4 identifies substantial differences in remuneration and working hours between these groups of the employed. The descriptive statistics show that involuntary part-time workers are employed for significantly fewer hours per week, on average, than voluntary part-time workers, and at a lower mean hourly wage. As a result, part-time workers who desire longer working hours earn significantly less per month than part-time workers who choose to work part-time.

Given the significant differences in both working hours and wages between voluntary and involuntary part-time workers, it was important to investigate whether the estimated premium to female part-time employment in South Africa is robust to a distinction among those working part-time. The results of multivariate analyses, which controlled for differences in observable characteristics between workers using data from the pooled LFS cross-sections, revealed a significant premium to both voluntary and involuntary part-time employment across various specifications of the wage equation. When a complete set of controls was utilised (including variables for individual and occupational characteristics as well as conditions of work) the premium to involuntary part-time employment (about 67 percent) was significantly higher than that estimated for voluntary part-time workers (approximately 58 percent).

As with the analysis of wage differentials between part-time and full-time workers in Chapter 3, it is possible that the premiums to both voluntary and involuntary part-time employment estimated at the cross-section could be biased by selection effects. To account for selection bias, fixed effects estimates were calculated using data from the LFS Panel. The results showed that the premium to voluntary part-time employment

increased with the within-transformation, while the premium to involuntary part-time employment declined. The increase in the premium to voluntary part-time work was consistent with negative selection into voluntary part-time employment, and the decrease in the premium to involuntary part-time employment was consistent with positive selection into involuntary part-time work.

There were two remaining sources of bias that could affect the estimated premiums to voluntary and involuntary part-time employment. Attenuation bias, which may result from error in the measurement of the change in involuntary or voluntary part-time employment status, can cause parameter estimates to be biased towards zero. It is possible, therefore, that the estimated premiums to both voluntary and involuntary part-time employment were understated. The presence of simultaneity bias, however, may have resulted in an overestimation of the premiums to voluntary and involuntary part-time work. Unfortunately, neither the attenuation bias nor the simultaneity bias problems could be addressed with the data available.

Evidence of differences in labour market attachment between voluntary and involuntary part-time workers would support divergent selection effects. To test this hypothesis, the final part of Chapter 4 used data from the LFS Panel to generate a transition matrix, showing the movements of women into and out of various labour market states over the six waves of the panel.

The results showed that, consistent with international findings, female part-time workers in South Africa are more likely than other groups of women to change their labour market status. Among part-time workers, those who work part-time involuntarily are less likely to move into full-time employment than voluntary part-time workers, suggesting that accessing full-time jobs may be easier for those who choose to work part-time. The results of the transition matrix also suggested that involuntary part-time workers exhibit a greater degree of labour market attachment than voluntary part-time workers: involuntary part-time workers who leave employment are more likely than voluntary part-time workers to be reported as unemployed and willing to accept work in the following period,

while voluntary part-time workers are more likely to be reported as economically inactive.

Chapter 5, the final analytical chapter of this thesis, used data from the 1995 and 1999 OHSs and the September 2001 and 2006 LFSs to examine the gender wage gap and gender discrimination among part-time and full-time workers in South Africa. The chapter investigated specifically how the magnitude of the gender wage gap, along with the factors contributing to this gap, has changed over time. Although a number of studies have researched the gender gap in wages among workers in South Africa, none has distinguished between full-time and part-time workers. This distinction is important, however, particularly in the context of legislative changes implemented by the post-apartheid government over the years. Occupations usually associated with women, such as domestic work and unskilled jobs, are often poorly remunerated and provide few (if any) benefits, and have been targeted by protective employment legislation as a result. These occupations are also overrepresented in women's part-time employment in South Africa, and any decline in the gender wage gap over the years should therefore be more pronounced among those who work part-time.

Evidence from the international labour market literature on the gender wage gap suggests that, on average, women earn less than men. Although this gap usually falls as the effects of observable differences between workers are controlled for, up to forty percent of the gender wage gap remains unexplained and is often attributed to the effects of discrimination. Studies have also pointed to a decline in the gender wage gap over time, and have attributed the decrease to improvements in gender-specific factors (such as gender differences in skills and/or occupations), as well as to a reduction in gender-based labour market discrimination. For South Africa, a few researchers have provided evidence of a gender gap in wages that persists when controlling for measurable differences between workers. However, there has been little work on how the gender wage gap has changed over time.

To extend existing research investigating the gender gap in wages in South Africa, Chapter 5 began by highlighting gender differences in observable characteristics among both part-time and full-time workers. The results showed that important differences exist between men and women who work part-time, and among those who work full-time, particularly in terms of occupations. In both full-time and part-time work, men are typically overrepresented in elementary occupations while women predominate in the domestic services. Important gender differences were found also in the conditions of employment faced by part-time and full-time workers. Although there has been some improvement for both men and women over the 2001 to 2006 period, women remained less likely than men to receive benefits such as medical aid or pension fund contributions from their employers, and were significantly less likely than men to be unionised.

The descriptive analysis of earnings differences found that among both the full-time and the part-time employed, women typically earn less than men, on average, in terms of both monthly and hourly wages. The results also pointed to a possible narrowing of the gender wage gap among both part-time and full-time workers, with mean female-male wage ratios increasing over time, particularly from 2001 to 2006. In addition, the increase in the female-male wage ratio was shown to be larger among the part-time employed, suggestive of a greater decline in the gender wage gap among those who work part-time.

To analyse the gender wage gap among both part-time and full-time workers further, multivariate analysis was used to control for differences in the observed characteristics of men and women. The results of Oaxaca-Blinder decompositions for the separate 1995, 1999, 2001 and 2006 samples showed that the magnitude of the residual gender gap among both part-time and full-time workers typically declined as gender differences in observable characteristics were accounted for and as additional controls were included in each specification of the wage equation. In addition, the residual wage gap among full-time workers exceeded that estimated for part-time workers in both 1999 and 2006, suggesting larger reductions in wage-based gender discrimination among part-time than among full-time workers.

To investigate and decompose the change in the gender wage gap over the years, the Juhn, Murphy and Pierce (JMP) decomposition technique was used. The JMP method allows the change in the total (or unadjusted) wage differential to be decomposed into components that recognise the contribution of changes in both gender specific factors (such as observable skills and discrimination) and in wage structure (the prices of observed and unobserved labour market skills and/or rents in certain sectors) to any change in the wage gap.

The analyses for 1995 and 1999, as well as for 2001 and 2006, reveal that the gender gap in wages declined over both of these periods and more so among individuals who work part-time. From 1995 to 1999, the decrease in the gender wage gap for both part-time and full-time workers (as estimated using a full set of control variables) can be attributed primarily to a change in the structure of wages (especially for part-time workers). This finding is consistent with the implementation of protective labour legislation over this period, which may have served to decrease the demand for male workers (particularly in part-time employment) thereby reducing the returns to their productive characteristics[51].

Reductions in the gender wage gap for both the part-time and the full-time wage employed over the 2001 to 2006 period, in contrast, appear to be the result of improvements in gender specific factors – notably women's characteristics improving relative to those of men coupled with a possible decline in discrimination against women. Evidence of a larger decline in gender discrimination among part-time than among full-time workers is consistent with legislative changes introduced over these years, and with the extension of minimum wage legislation to domestic workers in particular (although there is evidence of a decline in discrimination among both part-time and full-time workers even when individuals employed in the domestic services are excluded from the estimating sample). It is important to note, however, that the inability to account for potential sources of selection bias in the analyses presented in Chapter 5 does complicate the interpretation of the results.

[51] Analogously, the demand for female workers may have increased, raising the returns to their characteristics.

From the analyses presented in this thesis it is clear that part-time employment constitutes an important part of the South African labour market. To augment our understanding of the role of part-time work in the South African economy, further research is required. For example, it would be useful to consider the demand for part-time work by South African employers, and in particular, to identify (perhaps through interviews and/or case studies) what factors motivate firms to hire, or prohibit firms from employing, part-time workers. Even though protective labour legislation has served to improve the conditions of employment and remuneration of individuals who work part-time, it is possible that firms may be reluctant to employ workers part-time as a result of additional costs (perceived or real) imposed by this legislation. This may help to explain why the growth in part-time work in the country has been quite low, particularly since 2000.

Part-time jobs were also shown to provide a valuable source of employment to many workers, particularly those with household responsibilities. In addition, part-time jobs have the potential to offer individuals who lack the skills and/or qualifications to obtain full-time employment the opportunity to enter into the labour market and acquire work experience. There is only limited evidence to suggest that part-time work is being used as a stepping stone into employment in the South African labour market, however. Given the high rates of unemployment in the country, future research is needed to explore whether there is scope to expand the opportunities for part-time employment in South Africa and to identify the role that both the government and the private sector can play in increasing both the number and the quality of part-time jobs available.

Appendix A – Estimates from Chapter 3

Table A1. Estimating the part-time/full-time wage differential for women.

	I	II	III
Part-time	0.259***	0.405***	0.477***
	(0.010)	(0.010)	(0.010)
Age	0.037***	0.025***	0.021***
	(0.002)	(0.002)	(0.002)
Age squared/1000	-0.382***	-0.244***	-0.202***
	(0.024)	(0.021)	(0.020)
Job duration	0.064***	0.035***	0.021***
	(0.001)	(0.001)	(0.001)
Job duration squared/1000	-1.297***	-0.762***	-0.425***
	(0.044)	(0.036)	(0.036)
Primary education	0.157***	0.108***	0.098***
	(0.012)	(0.010)	(0.010)
Incomplete secondary education	0.585***	0.264***	0.244***
	(0.013)	(0.011)	(0.011)
Matric (Grade 12) or equivalent	1.128***	0.482***	0.425***
	(0.014)	(0.014)	(0.013)
Tertiary education	1.911***	0.819***	0.729***
	(0.014)	(0.017)	(0.016)
Coloured	0.284***	0.166***	0.124***
	(0.011)	(0.010)	(0.010)
Indian	0.531***	0.366***	0.308***
	(0.019)	(0.017)	(0.016)
White	0.717***	0.512***	0.430***
	(0.011)	(0.011)	(0.011)
Married/cohabiting	0.107***	0.049***	0.040***
	(0.008)	(0.007)	(0.006)
Previously married	0.121***	0.065***	0.051***
	(0.011)	(0.009)	(0.009)
Urban area	0.321***	0.207***	0.185***
	(0.008)	(0.007)	(0.007)
Professional	-	-0.176***	-0.122***
		(0.028)	(0.027)
Technical and associated professional	-	-0.361***	-0.296***
		(0.025)	(0.024)
Clerks	-	-0.544***	-0.474***
		(0.024)	(0.023)
Salespersons and skilled service workers	-	-0.874***	-0.745***
		(0.026)	(0.025)
Skilled agricultural workers	-	-0.899***	-0.811***
		(0.044)	(0.041)
Craft and related trades	-	-0.899***	-0.748***
		(0.030)	(0.029)
Plant and machine operators	-	-0.889***	-0.743***
		(0.029)	(0.028)
Elementary occupations	-	-0.974***	-0.834***
		(0.026)	(0.025)
Domestic services	-	-0.831***	-0.729***
		(0.050)	(0.050)
Mining	-	0.709***	0.532***
		(0.035)	(0.034)
Manufacturing	-	0.357***	0.277***
		(0.015)	(0.015)
Utilities	-	0.764***	0.591***
		(0.048)	(0.045)
Construction	-	0.428***	0.384***
		(0.031)	(0.031)
Wholesale/retail trade	-	0.205***	0.166***
		(0.014)	(0.014)
Transport	-	0.537***	0.385***
		(0.025)	(0.025)
Financial	-	0.564***	0.441***
		(0.016)	(0.016)
Community/social services	-	0.534***	0.400***
		(0.014)	(0.014)

Table A1. Continued

	I	II	III
Private households	-	0.090**	0.074*
		(0.045)	(0.045)
Exterior organisations/foreign government	-	0.577**	0.346*
		(0.225)	(0.193)
Union member	-	0.306***	0.136***
		(0.008)	(0.008)
Large firm	-	0.101***	0.048***
		(0.007)	(0.007)
Formal sector	-	0.314***	0.224***
		(0.014)	(0.014)
Permanent	-	-	0.031***
			(0.008)
UIF contribution	-	-	0.041***
			(0.007)
Medical aid contribution	-	-	0.224***
			(0.008)
Pension fund contribution	-	-	0.247***
			(0.009)
Employee received paid leave	-	-	0.187***
			(0.008)
Eastern Cape	-0.241***	-0.335***	-0.308***
	(0.014)	(0.012)	(0.012)
Northern Cape	-0.272***	-0.309***	-0.288***
	(0.016)	(0.014)	(0.014)
Free State	-0.402***	-0.486***	-0.424***
	(0.015)	(0.014)	(0.013)
KwaZulu-Natal	-0.149***	-0.224***	-0.200***
	(0.013)	(0.012)	(0.011)
North West province	-0.114***	-0.231***	-0.221***
	(0.015)	(0.014)	(0.013)
Gauteng	0.083***	0.011	-0.012
	(0.013)	(0.012)	(0.012)
Mpumalanga	-0.155***	-0.237***	-0.224***
	(0.015)	(0.014)	(0.013)
Northern province	-0.229***	-0.340***	-0.307***
	(0.015)	(0.013)	(0.013)
Wave 1	0.004	0.009	0.003
	(0.010)	(0.009)	(0.009)
Wave 2	0.079***	0.067***	0.041***
	(0.011)	(0.010)	(0.009)
Wave 3	0.093***	0.100***	0.080***
	(0.011)	(0.009)	(0.009)
Wave 4	0.193***	0.202***	0.172***
	(0.011)	(0.009)	(0.009)
Wave 5	0.183***	0.194***	0.171***
	(0.011)	(0.009)	(0.009)
Constant	-0.459***	0.652***	0.660***
	(0.039)	(0.046)	(0.045)
Number of observations	51 198	49 447	47 701
R-squared	0.62	0.73	0.75

Source: Pooled LFS cross-sections from September 2001 to March 2004

Notes: The data are not weighted. Robust standard errors are in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Legislative/managerial' and the omitted industry category is 'Agriculture'. *** Significant at 1 %. * Significant at 10 %.

Table A2. Estimates used to perform the Oaxaca-Blinder decomposition of the part-time/full-time wage gap.

	I		II		III	
	Part-time	**Full-time**	**Part-time**	**Full-time**	**Part-time**	**Full-time**
Age	0.035***	0.035***	0.028***	0.023***	0.024***	0.020***
	(0.005)	(0.002)	(0.006)	(0.002)	(0.006)	(0.002)
Age squared/1000	-0.401***	-0.354***	-0.312***	-0.219***	-0.264***	-0.189***
	(0.064)	(0.025)	(0.069)	(0.020)	(0.070)	(0.019)
Job duration	0.038***	0.068***	0.021***	0.038***	0.013***	0.022***
	(0.003)	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)
Job duration squared/1000	-0.642***	-1.406***	-0.327***	-0.836***	-0.161*	-0.464***
	(0.105)	(0.048)	(0.095)	(0.039)	(0.098)	(0.039)
Primary education	0.145***	0.160***	0.120***	0.104***	0.118***	0.091***
	(0.028)	(0.013)	(0.027)	(0.011)	(0.027)	(0.011)
Incomplete secondary education	0.495)***	0.598***	0.303***	0.255***	0.302***	0.229***
	(0.032	(0.014)	(0.030)	(0.012)	(0.031)	(0.012)
Matric (Grade 12) or equivalent	0.945***	1.148***	0.450***	0.479***	0.433***	0.415***
	(0.040)	(0.015)	(0.042)	(0.014)	(0.042)	(0.014)
Tertiary education	1.814***	1.927***	0.820***	0.815***	0.790***	0.716***
	(0.041)	(0.015)	(0.056)	(0.017)	(0.056)	(0.017)
Coloured	0.113***	0.308***	0.019	0.187***	-0.004	0.144***
	(0.032)	(0.012)	(0.031)	(0.011)	(0.031)	(0.010)
Indian	0.599***	0.524***	0.365***	0.363***	0.327***	0.303***
	(0.082)	(0.020)	(0.078)	(0.017)	(0.075)	(0.017)
White	0.655***	0.726***	0.491***	0.523***	0.412***	0.439***
	(0.039)	(0.012)	(0.040)	(0.012)	(0.040)	(0.011)
Married/cohabiting	0.024	0.115***	-0.006	0.055***	-0.013	0.047***
	(0.023)	(0.008)	(0.021)	(0.007)	(0.021)	(0.007)
Previously married	0.068**	0.124***	0.014	0.071***	0.013	0.056***
	(0.030)	(0.011)	(0.028)	(0.010)	(0.028)	(0.009)
Urban area	0.227***	0.333***	0.201***	0.203***	0.196***	0.178***
	(0.022)	(0.008)	(0.021)	(0.007)	(0.022)	(0.007)
Professional	-	-	-0.311*	-0.158***	-0.328*	-0.106***
			(0.164)	(0.028)	(0.177)	(0.027)
Technical and associated professional	-	-	-0.389**	-0.352***	-0.397**	-0.290***
			(0.161)	(0.025)	(0.173)	(0.024)
Clerks	-	-	-0.719***	-0.529***	-0.691***	-0.464***
			(0.159)	(0.024)	(0.171)	(0.023)
Salespersons and skilled service workerss	-	-	-1.004***	-0.855***	-0.956***	-0.729***
			(0.164)	(0.026)	(0.177)	(0.025)
Skilled agricultural workers	-	-	-1.020***	-0.887***	-1.071***	-0.799***
			(0.207)	(0.045)	(0.213)	(0.042)
Craft and related trades	-	-	-1.245***	-0.873***	-1.211***	-0.723***
			(0.184)	(0.030)	(0.194)	(0.029)
Plant and machine operators	-	-	-0.878***	-0.877***	-0.823***	-0.735***
			(0.193)	(0.029)	(0.200)	(0.028)
Elementary occupations	-	-	-1.006***	-0.968***	-0.970***	-0.829***
			(0.164)	(0.026)	(0.177)	(0.025)
Domestic services	-	-	-0.865***	-0.826***	-0.867***	-0.736***
			(0.192)	(0.053)	(0.202)	(0.052)
Mining	-	-	0.495***	0.715***	0.484***	0.532***
			(0.114)	(0.035)	(0.107)	(0.035)
Manufacturing	-	-	0.366***	0.364***	0.301***	0.281***
			(0.076)	(0.015)	(0.076)	(0.015)
Utilities	-	-	0.523	0.779***	0.406	0.601***
			(0.471)	(0.047)	(0.437)	(0.044)
Construction	-	-	0.426***	0.438***	0.409***	0.398***
			(0.104)	(0.032)	(0.106)	(0.031)
Wholesale/retail trade	-	-	0.226***	0.207***	0.242***	0.156***
			(0.058)	(0.014)	(0.058)	(0.014)
Transport	-	-	0.318***	0.559***	0.243***	0.401***
			(0.094)	(0.026)	(0.090)	(0.026)
Financial	-	-	0.418***	0.580***	0.368***	0.451***
			(0.070)	(0.016)	(0.069)	(0.016)
Community/social services	-	-	0.327***	0.563***	0.274***	0.420***
			(0.059)	(0.015)	(0.059)	(0.015)

Table A2. Continued.

	I		II		III	
	Part-time	**Full-time**	**Part-time**	**Full-time**	**Part-time**	**Full-time**
Private households	-	-	0.079	0.075	0.116	0.064
			(0.113)	(0.048)	(0.110)	(0.048)
Exterior organisations/foreign government	-	-	-0.539***	0.674***	-0.664***	0.444**
			(0.075)	(0.220)	(0.084)	(0.184)
Union member	-	-	0.431***	0.287***	0.231***	0.126***
			(0.040)	(0.008)	(0.042)	(0.008)
Large firm	-	-	0.110***	0.096***	0.094***	0.042***
			(0.035)	(0.007)	(0.035)	(0.007)
Formal sector	-	-	0.242***	0.324***	0.214***	0.218***
			(0.043)	(0.015)	(0.043)	(0.015)
Permanent	-	-	-	-	-0.011	0.049***
					(0.022)	(0.008)
UIF contribution	-	-	-	-	0.032	0.043***
					(0.022)	(0.007)
Medical aid contribution	-	-	-	-	0.154***	0.223***
					(0.038)	(0.009)
Pension fund contribution	-	-	-	-	0.180***	0.243***
					(0.034)	(0.009)
Employee received paid leave	-	-	-	-	0.190***	0.187***
					(0.028)	(0.008)
Eastern Cape	-0.209***	-0.255***	-0.320***	-0.341***	-0.295***	-0.311***
	(0.038)	(0.014)	(0.036)	(0.013)	(0.036)	(0.012)
Northern Cape	-0.379***	-0.257***	-0.424***	-0.293***	-0.426***	-0.264***
	(0.043)	(0.017)	(0.040)	(0.015)	(0.040)	(0.014)
Free State	-0.509***	-0.387***	-0.558***	-0.479***	-0.524***	-0.409***
	(0.040)	(0.016)	(0.037)	(0.014)	(0.038)	(0.014)
KwaZulu-Natal	-0.258***	-0.135***	-0.378***	-0.201***	-0.371***	-0.170***
	(0.039)	(0.014)	(0.037)	(0.012)	(0.037)	(0.012)
North West province	-0.254***	-0.097***	-0.337***	-0.219***	-0.326***	-0.207***
	(0.042)	(0.016)	(0.040)	(0.014)	(0.041)	(0.014)
Gauteng	-0.018	0.094***	-0.082**	0.021*	-0.101***	0.001
	(0.037)	(0.014)	(0.035)	(0.012)	(0.036)	(0.012)
Mpumalanga	-0.256***	-0.145***	-0.347***	-0.223***	-0.345***	-0.206***
	(0.043)	(0.016)	(0.040)	(0.014)	(0.040)	(0.014)
Northern province	-0.290***	-0.220***	-0.398***	-0.330***	-0.404***	-0.292***
	(0.048)	(0.016)	(0.046)	(0.014)	(0.046)	(0.013)
Wave 1	-0.040	0.009	-0.004	0.010	-0.001	0.004
	(0.031)	(0.011)	(0.029)	(0.009)	(0.029)	(0.009)
Wave 2	0.079**	0.076***	0.094***	0.060***	0.099***	0.032***
	(0.032)	(0.012)	(0.030)	(0.010)	(0.030)	(0.010)
Wave 3	0.077**	0.094***	0.091***	0.099***	0.080***	0.080***
	(0.032)	(0.011)	(0.030)	(0.010)	(0.030)	(0.010)
Wave 4	0.165***	0.197***	0.187***	0.202***	0.179***	0.170***
	(0.031)	(0.012)	(0.029)	(0.010)	(0.029)	(0.010)
Wave 5	0.142***	0.188***	0.157***	0.198***	0.149***	0.175***
	(0.032)	(0.011)	(0.029)	(0.010)	(0.030)	(0.010)
Constant	0.319***	-0.494***	1.364***	0.641***	1.415***	0.650***
	(0.118)	(0.041)	(0.213)	(0.046)	(0.223)	(0.045)
Number of observations	6 470	44 728	6 324	43 123	6 093	41 608
R-squared	0.52	0.63	0.59	0.75	0.61	0.77

Source: Pooled LFS cross-sections from September 2001 to March 2004

Notes: The data are not weighted. Robust standard errors are in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Legislative/managerial' and the omitted industry category is 'Agriculture'. *** Significant at 1 %. ** Significant at 5 %. * Significant at 10 %.

Table A3. Pooled and fixed effects earnings estimations.

	Women			Men	
	Pooled full cross-sections	**Pooled panel cross-sections**	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**
Part-time	0.459***	0.441***	0.466***	0.503***	0.568***
	(0.010)	(0.013)	(0.014)	(0.021)	(0.020)
Age	0.023***	0.019***	-	0.035***	-
	(0.002)	(0.003)		(0.002)	
Age squared/1000	-0.215***	-0.169***	0.117	-0.365***	-0.001
	(0.020)	(0.031)	(0.116)	(0.029)	(0.106)
Job duration	0.026***	0.024***	0.009***	0.018***	0.008***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
Job duration squared/1000	-0.540***	-0.489***	-0.223***	-0.297***	-0.136**
	(0.037)	(0.047)	(0.071)	(0.040)	(0.057)
Primary education	0.105***	0.112***	-	0.111***	-
	(0.010)	(0.016)		(0.013)	
Incomplete secondary education	0.258***	0.278***	-	0.301***	-
	(0.011)	(0.016)		(0.014)	
Matric (Grade 12) or equivalent	0.455***	0.445***	-	0.495***	-
	(0.014)	(0.019)		(0.017)	
Tertiary education	0.771***	0.741***	-	0.822***	-
	(0.017)	(0.022)		(0.020)	
Coloured	0.135***	0.123***	-	0.176***	-
	(0.010)	(0.013)		(0.012)	
Indian	0.317***	0.308***	-	0.277***	-
	(0.017)	(0.021)		(0.021)	
White	0.446***	0.447***	-	0.597***	-
	(0.011)	(0.014)		(0.013)	
Married/ cohabiting	0.043***	0.045***	0.035	0.127***	0.018
	(0.006)	(0.009)	(0.028)	(0.010)	(0.024)
Previously married	0.057***	0.065***	0.013	0.064***	0.075**
	(0.009)	(0.012)	(0.027)	(0.020)	(0.035)
Urban area	0.195***	0.204***	-	0.121***	-
	(0.007)	(0.010)		(0.009)	
Professional	-0.147***	-0.143***	-0.032	-0.116***	-0.046
	(0.027)	(0.034)	(0.038)	(0.027)	(0.030)
Technical and associated professional	-0.328***	-0.332***	-0.064*	-0.301***	-0.124***
	(0.024)	(0.030)	(0.035)	(0.021)	(0.025)
Clerks	-0.504***	-0.511***	-0.173***	-0.518***	-0.199***
	(0.024)	(0.029)	(0.034)	(0.022)	(0.027)
Salespersons and skilled service workers	-0.798***	-0.820***	-0.216***	-0.734***	-0.253***
	(0.025)	(0.032)	(0.036)	(0.022)	(0.028)
Skilled agricultural workers	-0.830***	-0.836***	-0.163**	-0.734***	-0.256***
	(0.042)	(0.058)	(0.074)	(0.032)	(0.037)
Craft and related trades	-0.813***	-0.833***	-0.182***	-0.586***	-0.206***
	(0.029)	(0.037)	(0.046)	(0.020)	(0.026)
Plant and machine operators	-0.809***	-0.837***	-0.191***	-0.682***	-0.247***
	(0.028)	(0.035)	(0.044)	(0.021)	(0.026)
Elementary occupations	-0.886***	-0.902***	-0.273***	-0.799***	-0.312***
	(0.025)	(0.031)	(0.039)	(0.021)	(0.026)
Domestic services	-0.782***	-0.829***	-0.345***	-0.856***	-0.337***
	(0.051)	(0.073)	(0.087)	(0.047)	(0.063)
Mining	0.612***	0.672***	0.343***	0.642***	0.294***
	(0.035)	(0.045)	(0.095)	(0.017)	(0.047)
Manufacturing	0.320***	0.350***	0.094**	0.588***	0.219***
	(0.015)	(0.020)	(0.041)	(0.015)	(0.031)
Utilities	0.656***	0.667***	0.232**	0.664***	0.257***
	(0.047)	(0.057)	(0.103)	(0.033)	(0.055)
Construction	0.435***	0.477***	0.154**	0.579***	0.224***
	(0.031)	(0.041)	(0.069)	(0.018)	(0.036)
Wholesale/retail trade	0.202***	0.230***	0.074*	0.429***	0.156***
	(0.014)	(0.019)	(0.041)	(0.015)	(0.033)
Transport	0.450***	0.512***	0.081	0.547***	0.160***
	(0.025)	(0.032)	(0.061)	(0.018)	(0.040)

Table A3. Continued.

	Women			Men	
	Pooled full cross-sections	**Pooled panel cross-sections**	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**
Financial	0.499***	0.516***	0.157***	0.570***	0.220***
	(0.016)	(0.021)	(0.045)	(0.019)	(0.036)
Community/social	0.473***	0.500***	0.252***	0.690***	0.245***
services	(0.014)	(0.019)	(0.042)	(0.016)	(0.035)
Private households	0.095**	0.153**	0.042	0.248***	-0.072*
	(0.046)	(0.069)	(0.086)	(0.027)	(0.040)
Exterior					
organisations/	0.538***	0.479	0.381	0.789***	0.230
foreign government	(0.207)	(0.333)	(0.346)	(0.239)	(0.453)
Union member	0.217***	0.227***	0.067***	0.137***	0.059***
	(0.008)	(0.010)	(0.012)	(0.009)	(0.011)
Large firm	0.066***	0.066***	0.023*	0.134***	0.036 ***
	(0.007)	(0.009)	(0.012)	(0.008)	(0.010)
Formal sector	0.261***	0.261***	0.094***	0.264***	0.096***
	(0.014)	(0.020)	(0.022)	(0.015)	(0.018)
Permanent	0.132***	0.151***	0.081***	0.191***	0.127 ***
employment	(0.007)	(0.010)	(0.013)	(0.011)	(0.014)
Medical aid	0.294***	0.289***	0.075***	0.308***	0.068***
contribution	(0.008)	(0.011)	(0.012)	(0.009)	(0.011)
UIF contribution	0.099***	0.083***	0.036***	0.133***	0.062***
	(0.007)	(0.009)	(0.010)	(0.009)	(0.010)
Eastern Cape	-0.319***	-0.299***	-	-0.231***	-
	(0.012)	(0.016)		(0.015)	
Northern Cape	-0.303***	-0.305***	-	-0.117***	-
	(0.014)	(0.018)		(0.015)	
Free State	-0.458***	-0.471***	-	-0.322***	-
	(0.013)	(0.017)		(0.016)	
KwaZulu-Natal	-0.203***	-0.221***	-	-0.060***	-
	(0.011)	(0.016)		(0.016)	
North-West	-0.236***	-0.226***	-	-0.167***	-
	(0.013)	(0.017)		(0.016)	
Gauteng	-0.007	-0.021	-	-0.000	-
	(0.012)	(0.016)		(0.015)	
Mpumalanga	-0.233***	-0.251***	-	-0.131***	-
	(0.013)	(0.018)		(0.016)	
Northern province	-0.317***	-0.312***	-	-0.223***	-
	(0.013)	(0.018)		(0.018)	
Wave 2	0.008	0.008	0.015	-0.007	0.007
	(0.009)	(0.012)	(0.011)	(0.011)	(0.010)
Wave 3	0.044***	0.039***	0.062***	0.003	0.054***
	(0.010)	(0.013)	(0.014)	(0.012)	(0.013)
Wave 4	0.088***	0.088***	0.106***	0.070***	0.119***
	(0.009)	(0.012)	(0.017)	(0.012)	(0.016)
Wave 5	0.177***	0.165***	0.201***	0.151***	0.212***
	(0.009)	(0.013)	(0.021)	(0.012)	(0.019)
Wave 6	0.177***	0.158***	0.185***	0.139***	0.221***
	(0.009)	(0.013)	(0.026)	(0.012)	(0.023)
Constant	0.609***	0.683***	1.488***	0.188***	1.794***
	(0.045)	(0.064)	(0.189)	(0.054)	(0.171)
Number of					
observations	48 311	28 288	28 449	32 971	33 181
R-squared	0.74	0.73	0.12 (within)	0.71	0.11 (within)

Source: Pooled LFS cross-sections from September 2001 to March 2004; LFS Panel (September 2001 to March 2004).

Notes: The data are not weighted. Robust standard errors are in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Legislative/managerial' and the omitted industry category is 'Agriculture'. *** Significant at 1 %. ** Significant at 5 %. * Significant at 10 %.

Table A4. Redefining part-time employment: Pooled and fixed effects estimates.

	< forty hours		< 28 hours	
	Pooled panel cross-sections	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**
Part-time	0.376***	0.373***	0.566***	0.596***
	(0.010)	(0.011)	(0.016)	(0.017)
Age	0.018***	-	0.018***	-
	(0.003)		(0.003)	
Age squared/1000	-0.165***	0.086	-0.162***	0.122
	(0.031)	(0.115)	(0.031)	(0.115)
Job duration	0.022***	0.008***	0.024***	0.010***
	(0.001)	(0.012)	(0.001)	(0.002)
Job duration squared/1000	-0.463***	-0.195***	-0.500***	-0.230***
	(0.047)	(0.071)	(0.047)	(0.071)
Primary education	0.114***	-	0.112***	-
	(0.016)		(0.015)	
Incomplete secondary education	0.279***	-	0.272***	-
	(0.016)		(0.016)	
Matric (Grade 12) or equivalent	0.444***	-	0.440***	-
	(0.019)		(0.019)	
Tertiary education	0.716***	-	0.743***	-
	(0.022)		(0.022)	
Coloured	0.128***	-	0.127***	-
	(0.013)		(0.013)	
Indian	0.321***	-	0.303***	-
	(0.021)		(0.021)	
White	0.470***	-	0.449***	-
	(0.014)		(0.014)	
Married/cohabiting	0.045***	0.036	0.045***	0.025
	(0.009)	(0.028)	(0.009)	(0.028)
Previously married	0.067***	0.012	0.063***	0.005
	(0.012)	(0.027)	(0.012)	(0.027)
Urban area	0.206***	-	0.202***	-
	(0.009)		(0.009)	
Professional	-0.180***	-0.037	-0.139***	-0.031
	(0.034)	(0.038)	(0.034)	(0.038)
Technical and associated professional	-0.368***	-0.070**	-0.325***	-0.063*
	(0.030)	(0.035)	(0.030)	(0.035)
Clerks	-0.506***	-0.171***	-0.511***	-0.169***
	(0.029)	(0.034)	(0.029)	(0.034)
Salespersons and skilled service workers	-0.811***	-0.208***	-0.816***	-0.215***
	(0.032)	(0.036)	(0.032)	(0.036)
Skilled agricultural workers	-0.832***	-0.149**	-0.835***	-0.168**
	(0.059)	(0.074)	(0.058)	(0.074)
Craft and related trades	-0.828***	-0.167***	-0.831***	-0.178***
	(0.037)	(0.046)	(0.037)	(0.045)
Plant and machine operators	-0.836***	-0.184***	-0.836	-0.193***
	(0.035)	(0.044)	(0.035)***	(0.044)
Elementary occupations	-0.896***	-0.267***	-0.902***	-0.271***
	(0.031)	(0.039)	(0.032)	(0.039)
Domestic Services	-0.838***	-0.392***	-0.847***	-0.359***
	(0.074)	(0.087)	(0.070)	(0.086)
Mining	0.672***	0.355***	0.669***	0.332***
	(0.045)	(0.095)	(0.045)	(0.095)
Manufacturing	0.350***	0.106***	0.351***	0.092**
	(0.020)	(0.041)	(0.019)	(0.041)
Utilities	0.676***	0.201*	0.661***	0.219**
	(0.057)	(0.103)	(0.057)	(0.103)
Construction	0.482***	0.157**	0.470***	0.156**
	(0.041)	(0.069)	(0.041)	(0.069)
Wholesale/retail trade	0.233***	0.082**	0.229***	0.072*
	(0.019)	(0.041)	(0.019)	(0.040)
Transport	0.520***	0.092	0.513***	0.083
	(0.032)	(0.061)	(0.031)	(0.061)
Financial	0.518***	0.173***	0.514***	0.148***
	(0.021)	(0.045)	(0.021)	(0.044)

Table A4. Continued.

	< forty hours		< 28 hours	
	Pooled panel cross-sections	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**
Community/social services	0.489***	0.251***	0.504***	0.251***
	(0.019)	(0.042)	(0.019)	(0.042)
Private households	0.162**	0.088	0.172***	0.060
	(0.069)	(0.086)	(0.065)	(0.086)
Exterior organisations/	0.496	0.385	0.474	0.380
foreign government	(0.333)	(0.346)	(0.332)	(0.344)
Union	0.213***	0.070***	0.227***	0.070***
	(0.010)	(0.012)	(0.010)	(0.012)
Large firm	0.095***	0.027***	0.061***	0.024***
	(0.009)	(0.012)	(0.009)	(0.012)
Formal sector	0.259***	0.094***	0.256***	0.099***
	(0.020)	(0.022)	(0.020)	(0.022)
Permanent	0.145***	0.074***	0.161***	0.091***
	(0.010)	(0.013)	(0.010)	(0.013)
UIF contribution	0.089***	0.038***	0.083***	0.038***
	(0.009)	(0.010)	(0.009)	(0.010)
Medical aid contribution	0.281***	0.069***	0.287***	0.075***
	(0.011)	(0.012)	(0.011)	(0.012)
Eastern Cape	-0.298***	-	-0.300***	-
	(0.016)		(0.016)	
Northern Cape	-0.307***	-	-0.303***	-
	(0.018)		(0.018)	
Free State	-0.470***	-	-0.471***	-
	(0.017)		(0.017)	
KwaZulu-Natal	-0.223***	-	-0.215***	-
	(0.016)		(0.016)	
North West	-0.221***	-	-0.225***	-
	(0.017)		(0.017)	
Gauteng	-0.017	-	-0.020	-
	(0.016)		(0.016)	
Mpumalanga	-0.255***	-	-0.244***	-
	(0.018)		(0.018)	
Northern province	-0.325***	-	-0.311	-
	(0.017)		(0.018)***	
Wave 2	0.011	0.018	0.007	0.014
	(0.012)	(0.011)	(0.012)	(0.011)
Wave 3	0.042***	0.068***	0.039***	0.060***
	(0.013)	(0.014)	(0.013)	(0.013)
Wave 4	0.090***	0.110***	0.090***	0.108***
	(0.012)	(0.017)	(0.012)	(0.017)
Wave 5	0.168***	0.208***	0.166***	0.202***
	(0.013)	(0.021)	(0.013)	(0.021)
Wave 6	0.159***	0.189***	0.158***	0.184***
	(0.013)	(0.026)	(0.013)	(0.025)
Constant	0.669***	1.514***	0.700***	1.479***
	(0.064)	(0.188)	(0.064)	(0.188)
Observations	28 288	28 449	28 288	28 449
R-squared	0.73	0.12 (within)	0.73	0.13 (within)

Source: LFS Panel (September 2001 to March 2004).

Notes: The data are not weighted. Robust standard errors are in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Legislative/managerial' and the omitted industry category is 'Agriculture'. *** Significant at 1 %. ** Significant at 5 %. * Significant at 10 %.

Table A5. Removing the tails of the weekly hours distribution: Pooled and fixed effects estimates

	< eighty hours		**< sixty hours**		**> twenty and < sixty hours**	
	Pooled panel cross-sections	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**
Part-time	0.425***	0.457***	0.375***	0.425***	0.199***	0.290***
	(0.013)	(0.014)	(0.013)	(0.015)	(0.014)	(0.016)
Age	0.018***	-	0.018***	-	0.017***	-
	(0.003)		(0.003)		(0.003)	
Age squared/1000	-0.169***	0.090	-0.169***	0.007	-0.152***	0.031
	(0.031)	(0.016)	(0.033)	(0.122)	(0.032)	(0.120)
Job duration	0.023***	0.069***	0.021***	0.007***	0.023***	0.006***
	(0.001)	(0.012)	(0.002)	(0.002)	(0.002)	(0.002)
Job duration squared/1000	-0.471***	-0.202***	-0.435***	-0.163**	-0.472***	-0.100
	(0.047)	(0.071)	(0.048)	(0.075)	(0.050)	(0.075)
Primary education	0.115***	-	0.120***	-	0.113***	-
	(0.016)		(0.017)		(0.017)	
Incomplete secondary education	0.284***	-	0.297***	-	0.296***	-
	(0.016)		(0.017)		(0.018)	
Matric (Grade 12) or equivalent	0.450***	-	0.458***	-	0.461***	-
	(0.019)		(0.020)		(0.020)	
Tertiary education	0.743***	-	0.741***	-	0.740***	-
	(0.022)		(0.023)		(0.023)	
Coloured	0.116***	-	0.100***	-	0.103***	-
	(0.013)		(0.014)		(0.014)	
Indian	0.295***	-	0.272***	-	0.262***	-
	(0.021)		(0.021)		(0.021)	
White	0.439***	-	0.426***	-	0.431***	-
	(0.014)		(0.014)		(0.014)	
Married/cohabiting	0.044***	0.029	0.033***	0.027	0.038***	0.015
	(0.009)	(0.028)	(0.009)	(0.030)	(0.009)	(0.029)
Previously married	0.069***	0.022	0.062***	0.012	0.064***	0.010
	(0.012)	(0.027)	(0.012)	(0.029)	(0.012)	(0.029)
Urban area	0.202***	-	0.192***	-	0.188***	-
	(0.010)		(0.010)		(0.010)	
Professional	-0.145***	-0.034	-0.152***	-0.031	-0.149***	-0.030
	(0.034)	(0.038)	(0.034)	(0.039)	(0.034)	(0.038)
Technical and associated professional	-0.324***	-0.063*	-0.333***	-0.072**	-0.328***	-0.066*
	(0.030)	(0.035)	(0.031)	(0.036)	(0.031)	(0.034)
Clerks	-0.511***	-0.175***	-0.521***	-0.189***	-0.516***	-0.179***
	(0.030)	(0.034)	(0.030)	(0.035)	(0.030)	(0.033)
Salespersons and skilled service workers	-0.807***	-0.203***	-0.809***	-0.224***	-0.798***	-0.214***
	(0.032)	(0.037)	(0.033)	(0.038)	(0.033)	(0.037)
Skilled agricultural workers	-0.845***	-0.160**	-0.860***	-0.137*	-0.847***	-0.128*
	(0.059)	(0.074)	(0.061)	(0.079)	(0.060)	(0.078)
Craft and related trades	-0.833***	-0.180***	-0.844***	-0.203***	-0.833***	-0.198***
	(0.037)	(0.046)	(0.038)	(0.048)	(0.038)	(0.046)
Plant and machine operators	-0.837***	-0.185***	-0.854***	-0.197***	-0.846***	-0.187***
	(0.036)	(0.044)	(0.036)	(0.046)	(0.036)	(0.044)
Elementary occupations	-0.906***	-0.273***	-0.927***	-0.294***	-0.925***	-0.293***
	(0.032)	(0.039)	(0.032)	(0.040)	(0.032)	(0.039)
Domestic Services	-0.843***	-0.343***	-0.854***	-0.360***	-0.839***	-0.369***
	(0.075)	(0.089)	(0.077)	(0.091)	(0.076)	(0.094)
Mining	0.674***	0.355***	0.649***	0.349***	0.645***	0.376***
	(0.044)	(0.096)	(0.045)	(0.104)	(0.045)	(0.102)
Manufacturing	0.348***	0.086**	0.350***	0.090**	0.349***	0.044
	(0.020)	(0.041)	(0.020)	(0.045)	(0.020)	(0.045)
Utilities	0.661***	0.215**	0.673***	0.215**	0.671***	0.162
	(0.057)	(0.104)	(0.056)	(0.109)	(0.056)	(0.105)
Construction	0.470***	0.141**	0.451***	0.139*	0.447***	0.120
	(0.041)	(0.070)	(0.043)	(0.073)	(0.042)	(0.076)

Table A5. Continued.

	< eighty hours		< sixty hours		> twenty and < sixty hours	
	Pooled panel cross-sections	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**
Wholesale/retail trade	0.238***	0.078*	0.249***	0.083*	0.248***	0.032
	(0.019)	(0.041)	(0.020)	(0.044)	(0.020)	(0.045)
Transport	0.518***	0.087	0.524***	0.106	0.528***	0.055
	(0.032)	(0.061)	(0.032)	(0.065)	(0.032)	(0.065)
Financial	0.517***	0.160***	0.506***	0.165***	0.511***	0.121**
	(0.021)	(0.045)	(0.021)	(0.048)	(0.021)	(0.048)
Community/social services	0.502***	0.248***	0.495***	0.255***	0.502***	0.212***
	(0.019)	(0.042)	(0.020)	(0.046)	(0.020)	(0.046)
Private households	0.164**	0.035	0.140*	0.018	0.106	-0.096
	(0.070)	(0.088)	(0.073)	(0.090)	(0.072)	(0.094)
Exterior organisations/ foreign government	0.474	0.384	0.431	0.390	0.431	0.327
	(0.333)	(0.344)	(0.333)	(0.340)	(0.330)	(0.324)
Union	0.227***	0.069***	0.222***	0.071***	0.212***	0.069***
	(0.010)	(0.012)	(0.011)	(0.013)	(0.010)	(0.012)
Large firm	0.072***	0.022*	0.081***	0.018	0.078***	0.015
	(0.009)	(0.012)	(0.009)	(0.012)	(0.009)	(0.012)
Formal sector	0.250***	0.086***	0.234***	0.087***	0.229***	0.057**
	(0.020)	(0.022)	(0.022)	(0.023)	(0.022)	(0.024)
Permanent	0.153***	0.086***	0.158***	0.088***	0.184***	0.113***
	(0.010)	(0.013)	(0.011)	(0.014)	(0.011)	(0.014)
UIF contribution	0.078***	0.033***	0.063***	0.023**	0.069***	0.019*
	(0.009)	(0.010)	(0.009)	(0.010)	(0.009)	(0.010)
Medical aid contribution	0.287***	0.074***	0.269***	0.065***	0.263***	0.061***
	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)
Eastern Cape	-0.286***	-	-0.260***	-	-0.270***	-
	(0.016)		(0.016)		(0.016)	
Northern Cape	-0.304***	-	-0.294***	-	-0.278***	-
	(0.018)		(0.018)		(0.018)	
Free State	-0.469***	-	-0.450***	-	-0.448***	-
	(0.017)		(0.018)		(0.018)	
KwaZulu-Natal	-0.219***	-	-0.219***	-	-0.201***	-
	(0.016)		(0.016)		(0.016)	
North West	-0.223***	-	-0.209***	-	-0.210***	-
	(0.017)		(0.018)		(0.018)	
Gauteng	-0.020	-	-0.012	-	-0.011	-
	(0.016)		(0.016)		(0.016)	
Mpumalanga	-0.248***	-	-0.236***	-	-0.224***	-
	(0.018)		(0.018)		(0.018)	
Northern province	-0.302***	-	-0.252***	-	-0.246***	-
	(0.018)		(0.018)		(0.018)	
Wave 2	0.009	0.013	0.007	0.015	0.003	0.018
	(0.012)	(0.011)	(0.012)	(0.012)	(0.013)	(0.012)
Wave 3	0.040***	0.063***	0.042***	0.075***	0.034***	0.069***
	(0.013)	(0.014)	(0.013)	(0.014)	(0.013)	(0.014)
Wave 4	0.087***	0.105***	0.089***	0.117***	0.086***	0.114***
	(0.012)	(0.017)	(0.013)	(0.018)	(0.013)	(0.018)
Wave 5	0.165***	0.201***	0.163***	0.210***	0.158***	0.209***
	(0.013)	(0.021)	(0.013)	(0.022)	(0.013)	(0.022)
Wave 6	0.157***	0.185***	0.152***	0.203***	0.150***	0.200***
	(0.013)	(0.026)	(0.014)	(0.027)	(0.014)	(0.027)
Constant	0.710***	1.559***	0.803***	1.786***	0.804***	1.852***
	(0.065)	(0.190)	(0.067)	(0.200)	(0.067)	(0.196)
Observations	27 827	27 988	25 631	25 785	24 078	24 230
R-squared	0.73	0.12 (within)	0.73	0.11 (within)	0.74	0.10 (within)

Source: LFS Panel (September 2001 to March 2004).

Notes: The data are not weighted. Robust standard errors are in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Legislative/managerial' and the omitted industry category is 'Agriculture'. *** Significant at 1 %. ** Significant at 5 %. * Significant at 10 %.

Table A6. Pooled and fixed effects estimates.

	Compressing the distribution		Excluding domestic workers	
	Pooled panel cross-sections	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**
Part-time	0.316***	0.371***	0.359***	0.438***
	(0.012)	(0.014)	(0.018)	(0.020)
Age	0.018***	-	0.016***	-
	(0.002)		(0.003)	
Age squared/1000	-0.171***	0.083	-0.146***	0.088
	(0.030)	(0.112)	(0.037)	(0.136)
Job duration	0.023***	0.009***	0.022***	0.056***
	(0.001)	(0.002)	(0.002)	(0.013)
Job duration squared/1000	-0.479***	-0.198***	-0.433***	-0.059
	(0.046)	(0.069)	(0.057)	(0.087)
Primary education	0.121***	-	0.076***	-
	(0.015)		(0.024)	
Incomplete secondary education	0.285***	-	0.234***	-
	(0.016)		(0.025)	
Matric (Grade 12) or equivalent	0.452***	-	0.409***	-
	(0.019)		(0.027)	
Tertiary education	0.738***	-	0.707***	-
	(0.022)		(0.029)	
Coloured	0.109***	-	0.175***	-
	(0.013)		(0.015)	
Indian	0.286***	-	0.306***	-
	(0.020)		(0.021)	
White	0.435***	-	0.455***	-
	(0.014)		(0.014)	
Married/cohabiting	0.037***	0.032	0.060***	0.041
	(0.009)	(0.027)	(0.011)	(0.034)
Previously married	0.059***	0.003	0.075***	-0.013
	(0.012)	(0.026)	(0.015)	(0.033)
Urban area	0.199***	-	0.205***	-
	(0.009)		(0.012)	
Professional	-0.150***	-0.025	-0.135***	-0.030
	(0.033)	(0.037)	(0.033)	(0.039)
Technical and associated professional	-0.337***	-0.062*	-0.325***	-0.062*
	(0.030)	(0.034)	(0.030)	(0.035)
Clerks	-0.520***	-0.174***	-0.502***	-0.164***
	(0.029)	(0.033)	(0.029)	(0.034)
Salespersons and skilled service workers	-0.798***	-0.210***	-0.804***	-0.194***
	(0.031)	(0.035)	(0.032)	(0.037)
Skilled agricultural workers	-0.851***	-0.190***	-0.821***	-0.156**
	(0.058)	(0.072)	(0.059)	(0.079)
Craft and related trades	-0.827***	-0.179***	-0.818***	-0.161***
	(0.036)	(0.044)	(0.037)	(0.047)
Plant and machine operators	-0.831***	-0.194***	-0.824***	-0.172***
	(0.035)	(0.043)	(0.035)	(0.045)
Elementary occupations	-0.895***	-0.268***	-0.882***	-0.242***
	(0.031)	(0.038)	(0.031)	(0.040)
Domestic Services	-0.822***	-0.332***	-	-
	(0.071)	(0.084)		
Mining	0.652***	0.319***	0.662***	0.300***
	(0.044)	(0.092)	(0.045)	(0.100)
Manufacturing	0.319***	0.080**	0.354***	0.018
	(0.019)	(0.040)	(0.021)	(0.049)
Utilities	0.636***	0.186*	0.673***	0.135
	(0.055)	(0.100)	(0.058)	(0.110)
Construction	0.445***	0.144**	0.491***	0.118
	(0.040)	(0.067)	(0.041)	(0.078)
Wholesale/retail trade	0.224***	0.067*	0.235***	-0.000
	(0.018)	(0.039)	(0.020)	(0.049)
Transport	0.493***	0.070	0.523***	-0.008
	(0.031)	(0.059)	(0.032)	(0.068)
Financial	0.479***	0.138***	0.520***	0.090*
	(0.020)	(0.043)	(0.022)	(0.053)

Table A6. Continued.

	Compressing the distribution		Excluding domestic workers	
	Pooled panel cross-sections	**Fixed effects**	**Pooled panel cross-sections**	**Fixed effects**
Community/social services	0.468***	0.230***	0.502***	0.184***
	(0.019)	(0.041)	(0.020)	(0.052)
Private households	0.113*	-0.020	0.220***	0.092
	(0.067)	(0.084)	(0.071)	(0.146)
Exterior organisations/foreign government	0.439	0.512	0.503	0.233
	(0.355)	(0.335)	(0.325)	(0.450)
Union member	0.220***	0.067***	0.213***	0.056***
	(0.010)	(0.012)	(0.011)	(0.013)
Large firm	0.075***	0.027**	0.064***	0.016
	(0.009)	(0.011)	(0.009)	(0.012)
Formal sector	0.259***	0.088***	0.336***	0.059**
	(0.020)	(0.021)	(0.023)	(0.027)
Permanent	0.171***	0.093***	0.191***	-0.000
	(0.010)	(0.012)	(0.013)	(0.000)
UIF contribution	0.082***	0.034***	0.067***	0.023**
	(0.009)	(0.009)	(0.010)	(0.011)
Medical aid contribution	0.275***	0.069***	0.288***	0.073***
	(0.010)	(0.011)	(0.011)	(0.012)
Eastern Cape	-0.289***	-	-0.181***	-
	(0.015)		(0.018)	
Northern Cape	-0.289***	-	-0.223***	-
	(0.018)		(0.022)	
Free State	-0.451***	-	-0.373***	-
	(0.017)		(0.021)	
KwaZulu-Natal	-0.197***	-	-0.146***	-
	(0.015)		(0.018)	
North West	-0.198***	-	-0.144***	-
	(0.017)		(0.020)	
Gauteng	-0.012	-	0.031*	-
	(0.015)		(0.017)	
Mpumalanga	-0.227***	-	-0.217***	-
	(0.017)		(0.020)	
Northern province	-0.276***	-	-0.223***	-
	(0.017)		(0.020)	
Wave 2	0.007	0.015	0.002	0.018
	(0.012)	(0.011)	(0.014)	(0.013)
Wave 3	0.041***	0.067***	0.031**	0.071***
	(0.012)	(0.013)	(0.015)	(0.016)
Wave 4	0.086***	0.108***	0.072***	0.109***
	(0.012)	(0.016)	(0.014)	(0.020)
Wave 5	0.162***	0.201***	0.151***	0.204***
	(0.012)	(0.020)	(0.015)	(0.025)
Wave 6	0.150***	0.185***	0.135***	0.192***
	(0.013)	(0.025)	(0.015)	(0.030)
Constant	0.772***	1.632***	0.624***	1.825***
	(0.063)	(0.183)	(0.072)	(0.211)
Observations	28 288	28 449	21 747	21 907
R-squared	0.73	0.10	0.68	0.09 (within)

Source: LFS Panel (September 2001 to March 2004).

Notes: The data are not weighted. Robust standard errors are in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Legislative/managerial' and the omitted industry category is 'Agriculture'. *** Significant at 1 %. ** Significant at 5 %. * Significant at 10 %.

Appendix B - Estimates from Chapter 4

Table B1. Marginal effects estimates from binomial probit comparing involuntary part-time wage workers to voluntary part-time wage workers.

	I	II	III	IV
Age	0.006*	0.003**	0.005	0.008**
	(0.003)	(0.003)	(0.003)	(0.003)
Age squared/1000	-0.120***	-0.097	-0.113***	-0.150***
	(0.038)	(0.039)	(0.040)	(0.041)
Job duration	-0.021***	-0.021***	-0.018***	-0.010***
	(0.002)	(0.002)	(0.002)	(0.003)
Job duration squared/1000	0.367***	0.363***	0.316***	0.148*
	(0.083)	(0.083)	(0.083)	(0.090)
Primary education	0.018	0.012	0.015	0.024
	(0.020)	(0.020)	(0.020)	(0.021)
Incomplete secondary education	0.071***	0.064***	0.061***	0.070***
	(0.022)	(0.022)	(0.023)	(0.023)
Matric (Grade 12) or equivalent	0.011	0.007	0.004	0.017
	(0.025)	(0.025)	(0.028)	(0.030)
Tertiary education	-0.094***	-0.098***	-0.040	-0.025
	(0.023)	(0.023)	(0.035)	(0.037)
Coloured	-0.075***	-0.060***	-0.071***	-0.073***
	(0.019)	(0.020)	(0.020)	(0.020)
Indian	-0.128***	-0.107***	-0.107**	-0.083*
	(0.038)	(0.041)	(0.042)	(0.045)
White	-0.204***	-0.185***	-0.195***	-0.156***
	(0.016)	(0.017)	(0.018)	(0.021)
Married/cohabiting	-0.035**	-0.009	-0.001	0.008
	(0.014)	(0.015)	(0.015)	(0.016)
Previously married	0.038*	0.037*	0.036*	0.041**
	(0.020)	(0.020)	(0.020)	(0.021)
Urban area	0.114***	0.105***	0.087***	0.083***
	(0.013)	(0.013)	(0.014)	(0.014)
Number of employed men in the household (aged 16 to 64 years)	-	-0.060***	-0.061***	-0.054***
		(0.011)	(0.011)	(0.011)
Number of employed women in the household (aged 16 to 59 years)	-	-0.017	-0.014	-0.018
		(0.013)	(0.013)	(0.013)
Number of unemployed adults in the household	-	0.026***	0.025***	0.024***
		(0.007)	(0.007)	(0.007)
Number of children younger than 7 years in the household	-	-0.020***	-0.017**	-0.016**
		(0.007)	(0.008)	(0.008)
Number of children aged 7 to 14 years in the household	-	0.003	0.002	0.001
		(0.006)	(0.006)	(0.006)
Professional	-	-	-0.058	-0.086
			(0.089)	(0.086)
Technical and associated professional	-	-	-0.003	-0.032
			(0.090)	(0.090)
Clerks	-	-	0.008	-0.036
			(0.091)	(0.088)
Salespersons and skilled service workers	-	-	-0.040	-0.077
			(0.086)	(0.083)
Skilled agricultural workers	-	-	0.395***	0.328**
			(0.124)	(0.142)
Craft and related trades	-	-	0.085	0.037
			(0.112)	(0.110)
Plant and machine operators	-	-	-0.002	-0.017
			(0.113)	(0.114)
Elementary occupations	-	-	0.051	0.009
			(0.096)	(0.095)
Domestic Services	-	-	0.187*	0.160
			(0.112)	(0.115)
Mining	-	-	0.196	0.186
			(0.197)	(0.202)
Manufacturing	-	-	0.195***	0.247***
			(0.057)	(0.059)

Table B1. Continued.

	I	II	III	IV
Utilities	-	-	0.112	0.216
			(0.215)	(0.212)
Construction	-	-	0.166**	0.153**
			(0.075)	(0.076)
Wholesale/retail trade	-	-	0.283***	0.272***
			(0.046)	(0.048)
Transport	-	-	0.152*	0.227***
			(0.083)	(0.086)
Financial	-	-	0.235***	0.283***
			(0.053)	(0.055)
Community/social services	-	-	0.172***	0.208***
			(0.045)	(0.047)
Private households	-	-	0.017	0.028
			(0.078)	(0.078)
Union member	-	-	-0.107***	-0.006
			(0.022)	(0.028)
Large firm	-	-	0.063***	0.055**
			(0.024)	(0.025)
Formal sector	-	-	0.022	0.043
			(0.026)	(0.027)
Permanent employment	-	-	-	-0.164***
				(0.015)
UIF contribution	-	-	-	-0.018
				(0.017)
Medical aid contribution	-	-	-	-0.050*
				(0.026)
Pension fund contribution	-	-	-	-0.030
				(0.024)
Employee received paid leave	-	-	-	-0.042**
				(0.020)
Eastern Cape	0.042*	0.032	0.036	0.003
	(0.024)	(0.024)	(0.025)	(0.025)
Northern Cape	-0.103***	-0.112***	-0.112***	-0.115***
	(0.024)	(0.024)	(0.024)	(0.025)
Free State	-0.029	-0.033	-0.040	-0.057**
	(0.025)	(0.025)	(0.025)	(0.025)
KwaZulu-Natal	0.025	0.012	0.006	-0.029
	(0.026)	(0.026)	(0.027)	(0.026)
North West	-0.002	-0.010	-0.021	-0.041
	(0.027)	(0.027)	(0.027)	(0.027)
Gauteng	0.032	0.022	0.013	-0.000
	(0.025)	(0.025)	(0.025)	(0.026)
Mpumalanga	0.106***	0.101***	0.108***	0.078**
	(0.030)	(0.030)	(0.031)	(0.031)
Northern province	-0.003	-0.012	-0.004	-0.024
	(0.031)	(0.031)	(0.032)	(0.032)
Wave 2	0.021	0.020	0.018	0.018
	(0.020)	(0.020)	(0.020)	(0.021)
Wave 3	-0.018	-0.020	-0.026	-0.018
	(0.020)	(0.020)	(0.020)	(0.021)
Wave 4	0.004	0.004	-0.003	-0.000
	(0.020)	(0.020)	(0.020)	(0.021)
Wave 5	-0.012	-0.011	-0.014	-0.007
	(0.020)	(0.020)	(0.020)	(0.021)
Wave 6	-0.046**	-0.047**	-0.041**	-0.037*
	(0.020)	(0.020)	(0.020)	(0.021)
Number of observations	6 725	6 725	6 550	6 308

Source: Pooled LFS cross-sections from September 2001 to March 2004.

Notes: The data are not weighted. Standard errors are in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Legislative/managerial' and the omitted industry category is 'Agriculture'. *** Significant at 1 %, ** significant ant 5 %, * significant at 10 percent.

Table B2. Estimating the part-time/full-time wage differential for women: distinguishing involuntary and voluntary part-time workers.

	I	II	III
Involuntary part-time	0.250***	0.412***	0.513***
	(0.017)	(0.016)	(0.016)
Voluntary part-time	0.262***	0.402***	0.460***
	(0.012)	(0.011)	(0.011)
Age	0.037***	0.025***	0.021***
	(0.002)	(0.002)	(0.002)
Age squared/1000	-0.382***	-0.244***	-0.202***
	(0.024)	(0.021)	(0.020)
Job duration	0.064***	0.035***	0.021***
	(0.001)	(0.001)	(0.001)
Job duration squared/1000	-1.298***	-0.763***	-0.426***
	(0.044)	(0.037)	(0.036)
Primary education	0.158***	0.108***	0.098***
	(0.012)	(0.010)	(0.010)
Incomplete secondary education	0.585***	0.264***	0.243***
	(0.013)	(0.011)	(0.011)
Matric (Grade 12) or equivalent	1.129***	0.482***	0.425***
	(0.014)	(0.014)	(0.013)
Tertiary education	1.912***	0.819***	0.729***
	(0.014)	(0.017)	(0.016)
Coloured	0.284***	0.167***	0.124***
	(0.011)	(0.010)	(0.010)
Indian	0.532***	0.367***	0.309***
	(0.019)	(0.017)	(0.016)
White	0.717***	0.512***	0.431***
	(0.011)	(0.011)	(0.011)
Married/cohabiting	0.107***	0.049***	0.040***
	(0.008)	(0.007)	(0.006)
Divorced/Widowed	0.121***	0.065***	0.050***
	(0.011)	(0.009)	(0.009)
Urban area	0.321***	0.207***	0.184***
	(0.008)	(0.007)	(0.007)
Professional	-	-0.175***	-0.122***
		(0.028)	(0.027)
Technical and associated professional	-	-0.361***	-0.296***
		(0.025)	(0.024)
Clerks	-	-0.544***	-0.473***
		(0.024)	(0.023)
Salespersons and skilled service workers	-	-0.874***	-0.744***
		(0.026)	(0.025)
Skilled agricultural workers	-	-0.900***	-0.813***
		(0.044)	(0.041)
Craft and related trades	-	-0.900***	-0.748***
		(0.030)	(0.029)
Plant and machine operators	-	-0.890***	-0.743***
		(0.029)	(0.028)
Elementary occupations	-	-0.974***	-0.834***
		(0.026)	(0.025)
Domestic services	-	-0.832***	-0.730***
		(0.050)	(0.050)
Mining	-	0.708***	0.530***
		(0.035)	(0.034)
Manufacturing	-	0.357***	0.276***
		(0.015)	(0.015)
Utilities	-	0.764***	0.590***
		(0.048)	(0.045)
Construction	-	0.428***	0.383***
		(0.031)	(0.031)
Wholesale/retail trade	-	0.204***	0.164***
		(0.014)	(0.014)
Transport	-	0.537***	0.385***
		(0.025)	(0.025)

Table B2. Continued.

	I	II	III
Financial	-	0.564***	0.441***
		(0.016)	(0.016)
Community/social services	-	0.534***	0.399***
		(0.014)	(0.014)
Private households	-	0.089**	0.074*
		(0.045)	(0.045)
Exterior organisations/foreign government	-	0.577**	0.347*
		(0.225)	(0.192)
Union member	-	0.306***	0.136***
		(0.008)	(0.008)
Large firm	-	0.101***	0.048***
		(0.007)	(0.007)
Formal sector	-	0.314***	0.223***
		(0.014)	(0.014)
Permanent	-	-	0.033***
			(0.008)
UIF contribution	-	-	0.041***
			(0.007)
Medical aid contribution	-	-	0.224***
			(0.008)
Pension fund contribution	-	-	0.246***
			(0.009)
Employee received paid leave	-	-	0.188***
			(0.008)
Eastern Cape	-0.241***	-0.336***	-0.308***
	(0.014)	(0.012)	(0.012)
Northern Cape	-0.271***	-0.309***	-0.287***
	(0.016)	(0.014)	(0.014)
Free State	-0.402***	-0.486***	-0.424***
	(0.015)	(0.014)	(0.013)
KwaZulu-Natal	-0.149***	-0.224***	-0.199***
	(0.013)	(0.012)	(0.011)
North West province	-0.114***	-0.231***	-0.221***
	(0.015)	(0.014)	(0.013)
Gauteng	0.082***	0.010	-0.012
	(0.013)	(0.012)	(0.012)
Mpumalanga	-0.155***	-0.237***	-0.225***
	(0.015)	(0.014)	(0.013)
Northern province	-0.228***	-0.339***	-0.307***
	(0.015)	(0.013)	(0.013)
Wave 1	0.004	0.009	0.003
	(0.010)	(0.009)	(0.009)
Wave 2	0.079***	0.067***	0.041***
	(0.011)	(0.010)	(0.009)
Wave 3	0.093***	0.100***	0.080***
	(0.011)	(0.009)	(0.009)
Wave 4	0.193***	0.202***	0.172***
	(0.011)	(0.009)	(0.009)
Wave 5	0.183***	0.194***	0.171***
	(0.011)	(0.009)	(0.009)
Constant	-0.459***	0.653***	0.662***
	(0.039)	(0.046)	(0.045)
Number of observations	51 172	49 425	47 685
R-squared	0.62	0.73	0.75

Source: Pooled LFS cross-sections from September 2001 to March 2004.

Notes: The data are not weighted. Robust standard errors are in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Legislative/managerial' and the omitted industry category is 'Agriculture'. *** Significant at 1 %. ** Significant at 5 %. * Significant at 10 %.

Table B3. Pooled and fixed effects earnings estimations of the part-time/full-time wage differential for women: distinguishing voluntary and involuntary part-time workers.

	Pooled cross-sectional waves	**Pooled panel waves**	**Fixed effects**
Involuntary part-time	0.494***	0.488***	0.479***
	(0.016)	(0.021)	(0.023)
Voluntary part-time	0.443***	0.420***	0.462***
	(0.011)	(0.015)	(0.016)
Age	0.022***	0.018***	-
	(0.002)	(0.003)	
Age squared/1000	-0.213***	-0.164***	0.118
	(0.020)	(0.031)	(0.116)
Job duration	0.026***	0.024***	0.009***
	(0.001)	(0.001)	(0.002)
Job duration squared/1000	-0.541***	-0.491***	-0.224***
	(0.037)	(0.047)	(0.071)
Primary education	0.105***	0.111***	-
	(0.010)	(0.016)	
Incomplete secondary education	0.258***	0.277***	-
	(0.011)	(0.016)	
Matric (Grade 12) or equivalent	0.455***	0.444***	-
	(0.014)	(0.019)	
Tertiary education	0.771***	0.741***	-
	(0.017)	(0.022)	
Coloured	0.136***	0.124***	-
	(0.010)	(0.013)	
Indian	0.317***	0.309***	-
	(0.017)	(0.021)	
White	0.447***	0.448***	-
	(0.011)	(0.014)	
Married/cohabiting	0.043***	0.045***	0.035
	(0.006)	(0.009)	(0.028)
Previously married	0.057***	0.065***	0.013
	(0.009)	(0.012)	(0.027)
Urban area	0.194***	0.203***	-
	(0.007)	(0.010)	
Professional	-0.146***	-0.143***	-0.032
	(0.027)	(0.034)	(0.038)
Technical and associated professional	-0.328***	-0.331***	-0.064*
	(0.024)	(0.030)	(0.035)
Clerks	-0.504***	-0.511***	-0.173***
	(0.024)	(0.029)	(0.034)
Salespersons and skilled service workers	-0.797***	-0.819***	-0.216***
	(0.025)	(0.032)	(0.036)
Skilled agricultural workers	-0.832***	-0.838***	-0.164**
	(0.042)	(0.058)	(0.074)
Craft and related trades	-0.813***	-0.833***	-0.182***
	(0.029)	(0.037)	(0.046)
Plant and machine operators	-0.808***	-0.836***	-0.191***
	(0.028)	(0.035)	(0.044)
Elementary occupations	-0.886***	-0.902***	-0.273***
	(0.025)	(0.031)	(0.039)
Domestic services	-0.783***	-0.829***	-0.345***
	(0.051)	(0.073)	(0.087)
Mining	0.610***	0.671***	0.343***
	(0.035)	(0.045)	(0.095)
Manufacturing	0.320***	0.349***	0.095**
	(0.015)	(0.020)	(0.041)
Utilities	0.656***	0.666***	0.233**
	(0.047)	(0.057)	(0.103)
Construction	0.435***	0.476***	0.154**
	(0.031)	(0.041)	(0.069)
Wholesale/retail trade	0.200***	0.228***	0.074*
	(0.014)	(0.019)	(0.041)

Table B2. Continued.

	Pooled cross-sectional waves	Pooled panel waves	Fixed effects
Transport	0.449***	0.511***	0.081
	(0.025)	(0.032)	(0.061)
Financial	0.499***	0.515***	0.158***
	(0.016)	(0.021)	(0.045)
Community/social services	0.472***	0.500***	0.253***
	(0.014)	(0.019)	(0.042)
Private households	0.095**	0.151**	0.042
	(0.046)	(0.069)	(0.086)
Exterior organisations/	0.539***	0.479	0.381
foreign government	(0.207)	(0.333)	(0.346)
Union member	0.217***	0.226***	0.067***
	(0.008)	(0.010)	(0.012)
Large firm	0.066***	0.066***	0.023*
	(0.007)	(0.009)	(0.012)
Formal sector	0.261***	0.260***	0.094***
	(0.014)	(0.020)	(0.022)
Permanent employment	0.134***	0.154***	0.081***
	(0.007)	(0.010)	(0.013)
Medical aid contribution	0.294***	0.289***	0.075***
	(0.008)	(0.011)	(0.012)
UIF contribution	0.099***	0.083***	0.036***
	(0.007)	(0.009)	(0.010)
Eastern Cape	-0.319***	-0.299***	-
	(0.012)	(0.016)	
Northern Cape	-0.302***	-0.303***	-
	(0.014)	(0.018)	
Free State	-0.457***	-0.471***	-
	(0.013)	(0.017)	
KwaZulu-Natal	-0.202***	-0.221***	-
	(0.011)	(0.016)	
North-West	-0.236***	-0.225***	-
	(0.013)	(0.017)	
Gauteng	-0.007	-0.021	-
	(0.012)	(0.016)	
Mpumalanga	-0.233***	-0.251***	-
	(0.013)	(0.018)	
Northern province	-0.317***	-0.312***	-
	(0.013)	(0.018)	
Wave 2	0.008	0.008	0.015
	(0.009)	(0.012)	(0.011)
Wave 3	0.044***	0.039***	0.062***
	(0.010)	(0.013)	(0.014)
Wave 4	0.088***	0.088***	0.106***
	(0.009)	(0.012)	(0.017)
Wave 5	0.177***	0.165***	0.201***
	(0.009)	(0.013)	(0.021)
Wave 6	0.177***	0.159***	0.185***
	(0.009)	(0.013)	(0.026)
Constant	0.611***	0.688***	1.486***
	(0.045)	(0.064)	(0.189)
Number of observations	48 286	28 274	28 435
R-squared	0.74	0.73	0.12 (within)

Source: Pooled LFS cross-sections from September 2001 to March 2004 and the LFS Panel (September 2001 to March 2004).

Notes: The data are not weighted. Robust standard errors are in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Legislative/managerial' and the omitted industry category is 'Agriculture'. *** Significant at 1 %. ** Significant at 5 %. * Significant at 10 %.

Appendix C - Estimates from Chapter 5

Table C1. Estimates used to perform the decomposition of the gender wage differential for part-time workers, 1995-1999: Specification I.

	1995		1999	
	Men	**Women**	**Men**	**Women**
Age	0.047**	0.032**	0.052**	0.002
	(0.022)	(0.016)	(0.023)	(0.017)
Age squared/1000	-0.465*	-0.344*	-0.684**	-0.006
	(0.260)	(0.183)	(0.277)	(0.208)
Job duration	0.026**	0.045***	0.068***	0.075***
	(0.012)	(0.013)	(0.018)	(0.012)
Job duration squared/1000	-0.445*	-1.054***	-0.920	-1.651***
	(0.241)	(0.400)	(0.608)	(0.351)
Primary education	0.222	0.041	-0.037	0.216**
	(0.143)	(0.123)	(0.170)	(0.093)
Incomplete secondary education	0.676***	1.041***	0.332*	0.619***
	(0.135)	(0.131)	(0.170)	(0.100)
Matric (Grade 12) or equivalent	1.052***	2.061***	0.668***	1.029***
	(0.159)	(0.144)	(0.184)	(0.121)
Tertiary education	1.246***	2.592***	1.122***	1.680***
	(0.132)	(0.124)	(0.192)	(0.125)
Coloured	0.378***	0.166	0.281*	-0.077
	(0.120)	(0.115)	(0.148)	(0.092)
Indian	0.355***	0.141	0.209	0.343**
	(0.134)	(0.176)	(0.151)	(0.175)
White	0.635***	0.487***	0.624***	0.466***
	(0.181)	(0.099)	(0.188)	(0.113)
Married/cohabiting	0.301***	-0.083	0.417***	0.091
	(0.096)	(0.092)	(0.104)	(0.072)
Previously married	0.336*	-0.413***	0.208	-0.068
	(0.191)	(0.134)	(0.233)	(0.100)
Eastern Cape	0.266*	0.028	-0.101	-0.443***
	(0.155)	(0.119)	(0.173)	(0.113)
Northern Cape	0.254	-0.218	-0.306*	-0.231*
	(0.214)	(0.139)	(0.182)	(0.127)
Free State	0.173	-0.045	-0.407**	-0.827***
	(0.195)	(0.138)	(0.206)	(0.121)
KwaZulu-Natal	0.097	0.273**	0.186	-0.313***
	(0.162)	(0.134)	(0.175)	(0.121)
North West province	0.362**	0.092	-0.041	-0.273**
	(0.171)	(0.159)	(0.192)	(0.132)
Gauteng	0.260	0.146	0.102	0.135
	(0.183)	(0.128)	(0.166)	(0.118)
Mpumalanga	0.574***	0.166	-0.448**	-0.618***
	(0.214)	(0.192)	(0.174)	(0.142)
Limpopo	0.696***	0.771***	0.520***	0.057
	(0.185)	(0.214)	(0.176)	(0.133)
Constant	0.392	-0.291	0.637	1.137***
	(0.437)	(0.353)	(0.462)	(0.331)
Number of observations	799	1 341	811	1 268
R-squared	0.30	0.51	0.34	0.44

Source: OHS 1995 and 1999.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, and the omitted marital status category is 'Never married'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C2. Estimates used to perform the decomposition of the gender wage differential for part-time workers, 1995-1999: Specification II.

	1995		1999	
	Men	**Women**	**Men**	**Women**
Age	0.035**	0.028**	0.044**	-0.013
	(0.018)	(0.011)	(0.021)	(0.016)
Age squared/1000	-0.374*	-0.270**	-0.538**	0.180
	(0.205)	(0.131)	(0.247)	(0.202)
Job duration	0.025**	0.018**	0.043**	0.044***
	(0.010)	(0.008)	(0.017)	(0.011)
Job duration squared/1000	-0.336*	-0.453**	-0.498	-1.049***
	(0.202)	(0.230)	(0.504)	(0.329)
Primary education	0.150	0.041	-0.279*	0.194**
	(0.118)	(0.064)	(0.167)	(0.093)
Incomplete secondary education	0.328***	0.213***	-0.050	0.313***
	(0.125)	(0.079)	(0.172)	(0.101)
Matric (Grade 12) or equivalent	0.422***	0.484***	0.084	0.524***
	(0.152)	(0.108)	(0.191)	(0.129)
Tertiary education	0.304	0.529***	0.258	0.786***
	(0.189)	(0.127)	(0.234)	(0.159)
Coloured	0.363***	0.159**	0.296**	-0.098
	(0.103)	(0.078)	(0.145)	(0.090)
Indian	0.212	-0.202	0.124	0.111
	(0.140)	(0.136)	(0.184)	(0.209)
White	0.562***	0.205**	0.606***	0.335***
	(0.159)	(0.085)	(0.188)	(0.107)
Married/cohabiting	0.185**	-0.031	0.220**	0.120*
	(0.090)	(0.057)	(0.098)	(0.070)
Previously married	0.210	-0.179***	0.093	-0.022
	(0.181)	(0.066)	(0.211)	(0.098)
Legislative/managerial	0.837**	0.423	-0.220	-0.268
	(0.359)	(0.285)	(0.361)	(0.271)
Technical and associated professionals	-0.199	0.070	-0.209	-0.294**
	(0.125)	(0.125)	(0.196)	(0.139)
Clerks	-0.436*	-0.278*	-0.313	-0.456***
	(0.222)	(0.151)	(0.293)	(0.163)
Salespersons and skilled service workers	-0.547***	-0.668***	-0.443*	-0.646***
	(0.203)	(0.171)	(0.253)	(0.186)
Skilled agricultural workers	-0.369	-0.271	-0.543**	-0.039
	(0.451)	(0.354)	(0.268)	(0.405)
Craft and related trades	-0.260	-0.833***	-0.139	-0.821***
	(0.212)	(0.317)	(0.245)	(0.235)
Plant and machine operators	-0.394*	-0.729***	-0.254	-0.648***
	(0.206)	(0.191)	(0.233)	(0.234)
Elementary workers	-0.484**	-0.660***	-0.373	-0.760***
	(0.204)	(0.173)	(0.231)	(0.175)
Domestic worker	-2.104***	-2.188***	-1.098***	-0.440
	(0.277)	(0.410)	(0.324)	(0.298)
Mining	0.748***	1.164***	1.437***	0.211
	(0.202)	(0.396)	(0.229)	(0.312)
Manufacturing	0.820***	0.507**	0.850***	0.448**
	(0.169)	(0.207)	(0.168)	(0.182)
Utilities	0.991**	0.235	0.000	1.060***
	(0.396)	(0.318)	(0.000)	(0.216)
Construction	0.515***	0.422*	0.503***	0.606*
	(0.160)	(0.227)	(0.178)	(0.323)
Wholesale/ retail trade	0.786***	0.468***	0.513***	0.255*
	(0.162)	(0.173)	(0.150)	(0.153)
Transport	0.700***	0.464*	0.707***	0.020
	(0.168)	(0.262)	(0.213)	(0.316)
Financial	0.942***	0.483**	0.589**	0.558**
	(0.190)	(0.196)	(0.260)	(0.222)
Community/social services	0.964***	0.491***	0.810***	0.331*
	(0.155)	(0.173)	(0.170)	(0.173)

Table C2. Continued.

	1995		1999	
	Men	**Women**	**Men**	**Women**
Private households	-0.198	-0.118	0.182	-0.341
	(0.182)	(0.413)	(0.187)	(0.269)
Union member	0.226***	0.288***	0.371***	0.564***
	(0.078)	(0.082)	(0.117)	(0.097)
Eastern Cape	0.209	-0.052	-0.107	-0.463***
	(0.135)	(0.086)	(0.168)	(0.109)
Northern Cape	0.285	-0.195**	-0.189	-0.290**
	(0.191)	(0.079)	(0.192)	(0.139)
Free State	0.163	-0.016	-0.493**	-0.851***
	(0.157)	(0.098)	(0.196)	(0.113)
KwaZulu-Natal	0.106	-0.021	0.166	-0.314***
	(0.137)	(0.091)	(0.168)	(0.111)
North West province	0.144	0.132	-0.176	-0.389***
	(0.154)	(0.107)	(0.181)	(0.122)
Gauteng	0.232	0.021	0.037	0.123
	(0.161)	(0.089)	(0.163)	(0.112)
Mpumalanga	0.579***	-0.162	-0.379**	-0.560***
	(0.193)	(0.122)	(0.162)	(0.123)
Limpopo	0.555***	0.245	0.429**	-0.065
	(0.163)	(0.154)	(0.172)	(0.125)
Constant	0.861**	1.553***	1.045**	2.196***
	(0.405)	(0.333)	(0.483)	(0.387)
Number of observations	775	1 322	765	1 216
R-squared	0.48	0.80	0.45	0.52

Source: OHS 1995 and 1999.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C3. Estimates used to perform the decomposition of the gender wage differential for full-time workers, 1995-1999: Specification I.

	1995		1999	
	Men	**Women**	**Men**	**Women**
Age	0.075***	0.046***	0.076***	0.066***
	(0.004)	(0.005)	(0.006)	(0.008)
Age squared/1000	-0.793***	-0.542***	-0.847***	-0.729***
	(0.046)	(0.069)	(0.066)	(0.098)
Job duration	0.031***	0.042***	0.037***	0.044***
	(0.002)	(0.003)	(0.003)	(0.004)
Job duration squared/1000	-0.551***	-0.828***	-0.564***	-0.654***
	(0.062)	(0.120)	(0.104)	(0.115)
Primary education	0.244***	0.300***	0.368***	0.285***
	(0.025)	(0.038)	(0.033)	(0.039)
Incomplete secondary education	0.756***	1.014***	0.775***	0.850***
	(0.025)	(0.038)	(0.035)	(0.042)
Matric (Grade 12) or equivalent	1.257***	1.680***	1.159***	1.404***
	(0.027)	(0.039)	(0.039)	(0.047)
Tertiary education	1.650***	2.192***	1.786***	2.005***
	(0.029)	(0.038)	(0.048)	(0.048)
Coloured	0.220***	0.322***	0.140***	0.267***
	(0.020)	(0.029)	(0.034)	(0.037)
Indian	0.453***	0.593***	0.409***	0.594***
	(0.025)	(0.034)	(0.057)	(0.056)
White	0.782***	0.638***	0.804***	0.676***
	(0.017)	(0.024)	(0.035)	(0.038)
Married/cohabiting	0.093***	0.069***	0.173***	0.087***
	(0.017)	(0.022)	(0.025)	(0.026)
Previously married	-0.003	0.099***	0.074	0.041
	(0.037)	(0.033)	(0.053)	(0.037)
Eastern Cape	-0.095***	-0.090***	-0.509***	-0.475***
	(0.025)	(0.034)	(0.039)	(0.046)
Northern Cape	-0.272***	-0.445***	-0.403***	-0.454***
	(0.030)	(0.045)	(0.047)	(0.054)
Free State	-0.560***	-0.494***	-0.562***	-0.592***
	(0.027)	(0.036)	(0.039)	(0.047)
KwaZulu-Natal	0.036	-0.059*	-0.243***	-0.261***
	(0.024)	(0.034)	(0.041)	(0.043)
North West province	-0.136***	-0.088**	-0.257***	-0.277***
	(0.030)	(0.042)	(0.041)	(0.048)
Gauteng	0.284***	0.254***	-0.006	-0.013
	(0.022)	(0.032)	(0.033)	(0.037)
Mpumalanga	-0.093***	-0.183***	-0.302***	-0.277***
	(0.027)	(0.041)	(0.040)	(0.050)
Limpopo	0.035	-0.007	-0.447***	-0.345***
	(0.033)	(0.052)	(0.045)	(0.053)
Constant	-0.592***	-0.625***	-0.559***	-0.747***
	(0.076)	(0.106)	(0.110)	(0.142)
Observations	15 479	9 965	9 858	6 852
R-squared	0.59	0.59	0.50	0.57

Source: OHS 1995 and 1999.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, and the omitted marital status category is 'Never married'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C4. Estimates used to perform the decomposition of the gender wage differential for full-time workers, 1995-1999: Specification II.

	1995		1999	
	Men	**Women**	**Men**	**Women**
Age	0.044***	0.026***	0.051***	0.043***
	(0.003)	(0.004)	(0.005)	(0.008)
Age squared/1000	-0.468***	-0.288***	-0.558***	-0.446***
	(0.039)	(0.046)	(0.062)	(0.100)
Job duration	0.025***	0.024***	0.022***	0.022***
	(0.002)	(0.002)	(0.002)	(0.003)
Job duration squared/1000	-0.442***	-0.451***	-0.339***	-0.277***
	(0.056)	(0.064)	(0.061)	(0.090)
Primary education	0.104***	0.122***	0.141***	0.133***
	(0.020)	(0.023)	(0.029)	(0.037)
Incomplete secondary education	0.328***	0.265***	0.349***	0.379***
	(0.021)	(0.026)	(0.032)	(0.041)
Matric (Grade 12) or equivalent	0.632***	0.496***	0.589***	0.673***
	(0.025)	(0.032)	(0.038)	(0.052)
Tertiary education	0.825***	0.717***	0.958***	0.905***
	(0.030)	(0.036)	(0.053)	(0.062)
Coloured	0.232***	0.145***	0.188***	0.185***
	(0.018)	(0.021)	(0.031)	(0.034)
Indian	0.352***	0.271***	0.336***	0.430***
	(0.024)	(0.028)	(0.058)	(0.060)
White	0.688***	0.408***	0.720***	0.520***
	(0.017)	(0.020)	(0.035)	(0.039)
Married/cohabiting	0.108***	0.071***	0.122***	0.034
	(0.015)	(0.015)	(0.024)	(0.024)
Previously married	0.022	0.089***	0.042	-0.022
	(0.032)	(0.020)	(0.050)	(0.033)
Legislative/managerial	0.009	-0.114*	0.053	-0.082
	(0.043)	(0.061)	(0.065)	(0.115)
Semi-professionals/technicians	-0.166***	-0.155***	-0.138**	-0.185***
	(0.035)	(0.034)	(0.059)	(0.050)
Clerks	-0.435***	-0.430***	-0.399***	-0.422***
	(0.039)	(0.038)	(0.062)	(0.056)
Salespersons and skilled service workers	-0.508***	-0.637***	-0.562***	-0.689***
	(0.039)	(0.043)	(0.061)	(0.067)
Skilled agricultural workers	-0.180**	-0.535***	-0.618***	-0.775***
	(0.080)	(0.155)	(0.070)	(0.098)
Craft and related trades	-0.420***	-0.775***	-0.441***	-0.717***
	(0.038)	(0.064)	(0.062)	(0.081)
Plant and machine operators	-0.513***	-0.659***	-0.544***	-0.666***
	(0.039)	(0.051)	(0.059)	(0.078)
Elementary workers	-0.701***	-0.833***	-0.658***	-0.730***
	(0.039)	(0.043)	(0.060)	(0.064)
Domestic worker	-1.858***	-1.645***	-0.674***	-0.688***
	(0.086)	(0.130)	(0.125)	(0.115)
Mining	0.775***	0.621***	0.771***	0.825***
	(0.025)	(0.107)	(0.037)	(0.134)
Manufacturing	0.901***	0.737***	0.821***	0.554***
	(0.021)	(0.037)	(0.034)	(0.050)
Utilities	0.975***	0.753***	1.055***	1.225***
	(0.042)	(0.103)	(0.090)	(0.135)
Construction	0.760***	0.723***	0.581***	0.708***
	(0.026)	(0.081)	(0.046)	(0.087)
Wholesale/ retail trade	0.733***	0.515***	0.554***	0.380***
	(0.022)	(0.036)	(0.036)	(0.048)
Transport	0.878***	0.791***	0.775***	0.619***
	(0.025)	(0.051)	(0.042)	(0.135)
Financial	0.860***	0.782***	0.810***	0.690***
	(0.029)	(0.040)	(0.044)	(0.051)
Community/ social services	0.896***	0.704***	0.862***	0.635***
	(0.021)	(0.035)	(0.037)	(0.047)

Table C4. Continued.

	1995		1999	
	Men	**Women**	**Men**	**Women**
Private households	0.271***	-0.074	0.204***	-0.014
	(0.059)	(0.126)	(0.061)	(0.102)
Union member	0.145***	0.144***	0.201***	0.290***
	(0.012)	(0.015)	(0.022)	(0.027)
Eastern Cape	-0.067***	-0.078***	-0.515***	-0.523***
	(0.022)	(0.025)	(0.037)	(0.040)
Northern Cape	-0.137***	-0.199***	-0.311***	-0.464***
	(0.026)	(0.031)	(0.040)	(0.052)
Free State	-0.386***	-0.179***	-0.547***	-0.664***
	(0.022)	(0.026)	(0.037)	(0.041)
KwaZulu-Natal	0.021	-0.039	-0.261***	-0.323***
	(0.022)	(0.024)	(0.037)	(0.043)
North West province	-0.050**	-0.059**	-0.327***	-0.360***
	(0.025)	(0.029)	(0.039)	(0.046)
Gauteng	0.166***	0.180***	-0.107***	-0.049
	(0.020)	(0.023)	(0.032)	(0.037)
Mpumalanga	-0.047*	-0.077***	-0.278***	-0.292***
	(0.024)	(0.028)	(0.039)	(0.047)
Limpopo	0.054**	-0.061*	-0.469***	-0.423***
	(0.027)	(0.036)	(0.042)	(0.049)
Constant	0.297***	0.906***	0.250**	0.458***
	(0.078)	(0.089)	(0.122)	(0.156)
Observations	15 152	9 822	9 209	6 470
R-squared	0.73	0.82	0.61	0.66

Source: OHS 1995 and 1999.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C5. Estimates used to perform the decomposition of the gender wage differential for part-time workers, 2001-2006: Specification I.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.048**	0.055***	0.022	-0.018
	(0.023)	(0.013)	(0.023)	(0.017)
Age squared/1000	-0.416	-0.632***	-0.211	0.181
	(0.277)	(0.146)	(0.278)	(0.210)
Job duration	0.092***	0.037***	0.065***	0.027**
	(0.019)	(0.011)	(0.016)	(0.013)
Job duration squared/1000	-2.462***	-0.520	-1.349***	-0.271
	(0.702)	(0.330)	(0.486)	(0.433)
Primary education	0.260	0.285***	0.026	0.111
	(0.211)	(0.079)	(0.148)	(0.113)
Incomplete secondary education	0.701***	0.621***	0.623***	0.322***
	(0.233)	(0.089)	(0.168)	(0.114)
Matric (Grade 12) or equivalent	1.065***	1.348***	0.853***	0.714***
	(0.242)	(0.111)	(0.219)	(0.134)
Tertiary education	1.701***	1.976***	1.336***	1.630***
	(0.247)	(0.116)	(0.236)	(0.153)
Coloured	0.141	0.113	0.001	0.102
	(0.191)	(0.097)	(0.183)	(0.108)
Indian	0.383	0.284**	0.537	1.582***
	(0.312)	(0.140)	(0.346)	(0.358)
White	0.477**	0.535***	0.535**	0.535***
	(0.208)	(0.117)	(0.262)	(0.132)
Married/cohabiting	0.210*	-0.053	0.136	0.081
	(0.108)	(0.069)	(0.112)	(0.069)
Previously married	-0.322	-0.073	-0.438**	0.104
	(0.268)	(0.089)	(0.216)	(0.100)
Eastern Cape	-0.431**	-0.283**	-0.159	-0.409***
	(0.212)	(0.116)	(0.216)	(0.108)
Northern Cape	-0.675***	-0.312***	-0.432**	-0.596***
	(0.201)	(0.121)	(0.197)	(0.103)
Free State	-0.369	-0.536***	-0.509**	-0.606***
	(0.238)	(0.115)	(0.228)	(0.120)
KwaZulu-Natal	-0.229	-0.319***	-0.329	-0.464***
	(0.220)	(0.118)	(0.209)	(0.112)
North West province	-0.224	-0.268**	-0.342	-0.206
	(0.262)	(0.130)	(0.278)	(0.158)
Gauteng	-0.152	-0.179	0.037	-0.166
	(0.215)	(0.120)	(0.228)	(0.108)
Mpumalanga	-0.257	-0.156	-0.206	-0.190
	(0.285)	(0.125)	(0.226)	(0.144)
Limpopo	-0.195	-0.237*	0.126	-0.569***
	(0.260)	(0.139)	(0.296)	(0.163)
Constant	0.070	-0.056	1.036**	1.849***
	(0.488)	(0.309)	(0.471)	(0.365)
Number of observations	541	1 098	550	1 206
R-squared	0.40	0.58	0.39	0.60

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, and the omitted marital status category is 'Never married'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C6. Estimates used to perform the decomposition of the gender wage differential for part-time workers, 2001-2006: Specification II.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.035*	0.054***	0.008	-0.018
	(0.020)	(0.016)	(0.021)	(0.018)
Age squared/1000	-0.315	-0.641***	-0.056	0.149
	(0.236)	(0.198)	(0.247)	(0.222)
Job duration	0.061***	0.024**	0.044***	0.023*
	(0.021)	(0.010)	(0.017)	(0.012)
Job duration squared/1000	-1.647**	-0.333	-0.923*	-0.324
	(0.782)	(0.309)	(0.523)	(0.375)
Primary education	0.104	0.225***	-0.069	0.087
	(0.158)	(0.079)	(0.152)	(0.110)
Incomplete secondary education	0.336*	0.403***	0.337*	0.191*
	(0.189)	(0.090)	(0.173)	(0.110)
Matric (Grade 12) or equivalent	0.525**	0.762***	0.243	0.290**
	(0.231)	(0.124)	(0.193)	(0.135)
Tertiary education	0.808***	1.132***	0.513*	0.860***
	(0.268)	(0.191)	(0.266)	(0.169)
Coloured	0.151	0.054	-0.077	0.003
	(0.172)	(0.103)	(0.141)	(0.093)
Indian	0.281	0.077	0.360	1.482***
	(0.328)	(0.156)	(0.408)	(0.303)
White	0.293	0.418***	0.611***	0.537***
	(0.197)	(0.119)	(0.219)	(0.127)
Married/cohabiting	0.124	-0.067	0.002	0.021
	(0.094)	(0.069)	(0.102)	(0.060)
Previously married	-0.107	-0.059	-0.264	0.029
	(0.209)	(0.085)	(0.223)	(0.093)
Legislative/managerial	0.401	0.785***	-0.100	-0.398
	(0.481)	(0.299)	(0.352)	(0.249)
Technical and associate professionals	-0.426	-0.195	-0.437	-0.227
	(0.250)*	(0.168)	(0.284)	(0.200)
Clerks	-0.316	-0.276	-0.751***	-0.930***
	(0.328)	(0.200)	(0.281)	(0.198)
Service/shop/sales workers	-0.353	-0.412*	-0.798**	-1.073***
	(0.337)	(0.250)	(0.311)	(0.218)
Skilled agriculture and fishery	-0.659*	-0.707*	-1.179**	-0.605***
	(0.363)	(0.375)	(0.490)	(0.220)
Craft and related trades workers	-0.335	-0.838***	-1.024***	-0.858***
	(0.350)	(0.295)	(0.333)	(0.273)
Plant and machine operators	-0.080	-0.422	-0.505	-1.172***
	(0.330)	(0.330)	(0.369)	(0.349)
Elementary occupations	-0.809***	-0.677***	-0.856***	-0.776***
	(0.308)	(0.239)	(0.308)	(0.225)
Domestic workers	-0.211	-0.123	-0.975**	-0.445
	(0.398)	(0.367)	(0.416)	(0.310)
Mining	0.427	0.931***	0.170	-0.259
	(0.274)	(0.193)	(0.549)	(0.330)
Manufacturing	0.320	0.324	0.967***	0.172
	(0.253)	(0.260)	(0.244)	(0.252)
Utilities	0.944**	0.000	0.034	0.592**
	(0.380)	(0.000)	(0.262)	(0.285)
Construction	0.422	0.078	0.800***	0.202
	(0.247)*	(0.332)	(0.216)	(0.216)
Wholesale/retail trade	0.220	0.353**	0.546***	0.405*
	(0.192)	(0.163)	(0.204)	(0.229)
Transport	0.263	0.075	0.460	0.681**
	(0.237)	(0.232)	(0.349)	(0.332)
Financial	0.159	0.443**	0.420	0.572**
	(0.277)	(0.190)	(0.272)	(0.246)
Community/social services	0.596***	0.298	0.734***	0.339
	(0.201)	(0.176)*	(0.221)	(0.225)
Private households	-0.372	-0.463	0.151	-0.300
	(0.257)	(0.291)	(0.186)	(0.287)

Table C6. Continued.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Union member	0.207	0.482***	0.430**	0.440***
	(0.140)	(0.105)	(0.167)	(0.113)
Eastern Cape	-0.487**	-0.408***	-0.339*	-0.538***
	(0.208)	(0.120)	(0.179)	(0.097)
Northern Cape	-0.504***	-0.368***	-0.463***	-0.611***
	(0.172)	(0.116)	(0.166)	(0.093)
Free State	-0.184	-0.566***	-0.443**	-0.596***
	(0.205)	(0.120)	(0.196)	(0.115)
KwaZulu-Natal	-0.283	-0.327***	-0.356*	-0.536***
	(0.196)	(0.124)	(0.182)	(0.099)
North West	-0.192	-0.349***	-0.280	-0.241*
	(0.241)	(0.134)	(0.251)	(0.133)
Gauteng	-0.082	-0.182	0.129	-0.149
	(0.191)	(0.122)	(0.179)	(0.099)
Mpumalanga	-0.446*	-0.214	-0.040	-0.150
	(0.242)	(0.135)	(0.209)	(0.120)
Limpopo	-0.358	-0.365**	0.066	-0.632***
	(0.241)	(0.145)	(0.261)	(0.171)
Constant	1.169**	0.673	1.982***	2.750***
	(0.592)	(0.438)	(0.609)	(0.468)
Number of observations	529	1 081	548	1 203
R-squared	0.55	0.64	0.55	0.67

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C7. Estimates used to perform the decomposition of the gender wage differential for part-time workers, 2001-2006: Specification III.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.032*	0.055***	0.000	-0.011
	(0.017)	(0.017)	(0.019)	(0.017)
Age squared/1000	-0.331	-0.630***	0.065	0.071
	(0.205)	(0.212)	(0.226)	(0.214)
Job duration	0.031*	0.018	0.037**	0.017
	(0.018)	(0.011)	(0.017)	(0.013)
Job duration squared/1000	-0.822	-0.306	-0.884*	-0.304
	(0.630)	(0.348)	(0.512)	(0.364)
Primary education	-0.066	0.221***	-0.074	0.089
	(0.165)	(0.079)	(0.134)	(0.107)
Incomplete secondary education	0.197	0.417***	0.264*	0.172
	(0.185)	(0.090)	(0.146)	(0.108)
Matric (Grade 12) or equivalent	0.223	0.711***	0.235	0.250*
	(0.214)	(0.130)	(0.161)	(0.133)
Tertiary education	0.639***	1.137***	0.501**	0.801***
	(0.241)	(0.189)	(0.242)	(0.170)
Coloured	0.039	0.015	-0.138	-0.021
	(0.161)	(0.100)	(0.134)	(0.093)
Indian	0.377	0.215	0.381**	1.438***
	(0.302)	(0.181)	(0.389)	(0.320)
White	0.059	0.201	0.429	0.525***
	(0.187)	(0.126)	(0.210)	(0.116)
Married/cohabiting	0.126	-0.043	-0.045	0.011
	(0.094)	(0.071)	(0.100)	(0.060)
Previously married	0.007	-0.054	-0.315	0.037
	(0.179)	(0.090)	(0.237)	(0.090)
Legislative/managerial	0.176	0.709**	-0.256	-0.638**
	(0.437)	(0.347)	(0.345)	(0.275)
Technical and associate professionals	-0.386	-0.248	-0.460*	-0.168
	(0.292)	(0.171)	(0.244)	(0.200)
Clerks	-0.214	-0.290	-0.798***	-0.939***
	(0.338)	(0.203)	(0.248)	(0.195)
Service/shop/sales workers	-0.091	-0.329	-0.811***	-1.059***
	(0.345)	(0.264)	(0.274)	(0.216)
Skilled agriculture and fishery	-0.123	-0.758***	-1.072**	-0.597***
	(0.369)	(0.287)	(0.492)	(0.227)
Craft and related trades workers	0.058	-0.759**	-1.010***	-0.725***
	(0.394)	(0.316)	(0.286)	(0.270)
Plant and machine operators	0.209	-0.495	-0.480	-1.074***
	(0.349)	(0.299)*	(0.322)	(0.355)
Elementary occupations	-0.530	-0.639***	-0.856***	-0.727***
	(0.324)	(0.247)	(0.267)	(0.224)
Domestic workers	0.217	-0.174	-1.035***	-0.415
	(0.400)	(0.333)	(0.390)	(0.309)
Mining	0.492	0.845***	-0.026	-0.170
	(0.312)	(0.221)	(0.528)	(0.313)
Manufacturing	0.194	0.237	0.807***	0.064
	(0.247)	(0.262)	(0.227)	(0.252)
Utilities	0.929***	0.000	-0.122	0.598**
	(0.324)	(0.000)	(0.255)	(0.286)
Construction	0.429	0.085	0.887***	0.223
	(0.269)	(0.294)	(0.203)	(0.209)
Wholesale/retail trade	0.289	0.367**	0.498**	0.392*
	(0.195)	(0.171)	(0.195)	(0.218)
Transport	0.357	0.078	0.409	0.578**
	(0.231)	(0.235)	(0.316)	(0.273)
Financial	0.173	0.404**	0.409	0.444*
	(0.269)	(0.204)	(0.267)	(0.247)
Community/social services	0.660***	0.261	0.601***	0.269
	(0.196)	(0.188)	(0.208)	(0.221)

Table C7. Continued.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Private households	-0.173	-0.048	0.366*	-0.107
	(0.249)	(0.196)	(0.190)	(0.278)
Union member	-0.452**	0.290**	0.062	0.164
	(0.185)	(0.137)	(0.151)	(0.126)
Large firm	0.035	0.192	0.214*	-0.121
	(0.130)	(0.109)*	(0.120)	(0.113)
Formal sector	0.422***	0.334***	0.245**	0.296***
	(0.152)	(0.123)	(0.120)	(0.109)
Permanent employment	0.115	-0.029	0.064	0.006
	(0.105)	(0.071)	(0.111)	(0.063)
Pension fund contribution	0.438**	0.179	0.164	0.383***
	(0.178)	(0.114)	(0.186)	(0.111)
UIF contribution	0.054	0.072	0.000	0.119
	(0.104)	(0.072)	(0.000)	(0.190)
Medical aid contribution	0.178	-0.062	0.366**	-0.026
	(0.160)	(0.108)	(0.154)	(0.138)
Employee received paid leave	0.466***	0.272***	0.035	-0.007
	(0.152)	(0.081)	(0.194) ***	(0.081)
Eastern Cape	-0.527***	-0.326***	-0.339*	-0.551***
	(0.187)	(0.115)	(0.176)	(0.099)
Northern Cape	-0.581***	-0.427***	-0.498***	-0.603***
	(0.190)	(0.119)	(0.162)	(0.098)
Free State	-0.334	-0.489***	-0.435**	-0.619***
	(0.203)	(0.120)	(0.199)	(0.117)
KwaZulu-Natal	-0.462**	-0.307**	-0.304	-0.556***
	(0.182)	(0.123)	(0.189)	(0.101)
North West	-0.274	-0.270*	-0.303	-0.286**
	(0.234)	(0.140)	(0.253)	(0.127)
Gauteng	-0.283	-0.192	0.116	-0.169*
	(0.175)	(0.123)	(0.184)	(0.098)
Mpumalanga	-0.552**	-0.205	-0.083	-0.204*
	(0.240)	(0.133)	(0.205)	(0.119)
Limpopo	-0.486**	-0.338**	0.056	-0.648***
	(0.227)	(0.155)	(0.258)	(0.169)
Constant	0.887*	0.231	1.934	2.319***
	(0.531)	(0.475)	(0.510)	(0.493)
Number of observations	483	991	539	1 186
R-squared	0.63	0.67	0.58	0.68

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C8. Estimates used to perform the decomposition of the gender wage differential for full-time workers, 2001-2006: Specification I.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.064***	0.044***	0.066***	0.036***
	(0.008)	(0.006)	(0.006)	(0.008)
Age squared/1000	-0.676***	-0.449***	-0.678***	-0.367***
	(0.093)	(0.074) ***	(0.077)	(0.100)
Job duration	0.052***	0.061	0.048***	0.053***
	(0.003)	(0.004)	(0.004)	(0.005)
Job duration squared/1000	-1.071***	-1.347***	-0.784***	-0.911***
	(0.099)	(0.135)	(0.109)	(0.169)
Primary education	0.343***	0.258***	0.240***	0.097*
	(0.040)	(0.039)	(0.046)	(0.053)
Incomplete secondary education	0.735***	0.739***	0.533***	0.450***
	(0.041)	(0.040)	(0.046)	(0.054)
Matric (Grade 12) or equivalent	1.175***	1.373***	0.919***	1.017***
	(0.044)	(0.044)	(0.050)	(0.057)
Tertiary education	1.824***	2.043***	1.710***	1.788***
	(0.049)	(0.045)	(0.059)	(0.058)
Coloured	0.259***	0.341***	0.278***	0.383***
	(0.036)	(0.039)	(0.039)	(0.041)
Indian	0.476***	0.578***	0.606***	0.424***
	(0.048)	(0.051)	(0.093)	(0.057)
White	0.803***	0.764***	0.793***	0.704***
	(0.032)	(0.035)	(0.043)	(0.046)
Married/cohabiting	0.162***	0.116***	0.082***	0.115***
	(0.025)	(0.024)	(0.028)	(0.028)
Previously married	0.063	0.143***	-0.134*	0.057
	(0.053)	(0.034)	(0.073)	(0.043)
Eastern Cape	-0.338***	-0.344***	-0.259***	-0.270***
	(0.044)	(0.051)	(0.048)	(0.044)
Northern Cape	-0.382***	-0.412***	-0.203***	-0.267***
	(0.043)	(0.051)	(0.042)	(0.047)
Free State	-0.268***	-0.419***	-0.157***	-0.279***
	(0.044)	(0.055)	(0.050)	(0.050)
KwaZulu-Natal	-0.125***	-0.215***	-0.157***	-0.117***
	(0.041)	(0.049)	(0.052)	(0.044)
North West province	-0.089**	-0.246***	-0.134**	-0.104**
	(0.043)	(0.054)	(0.053)	(0.048)
Gauteng	0.100**	0.058	0.058	0.138***
	(0.040)	(0.049)	(0.047)	(0.048)
Mpumalanga	-0.083*	-0.288***	-0.112**	-0.182***
	(0.049)	(0.056)	(0.049)	(0.049)
Limpopo	-0.451***	-0.390***	-0.261***	-0.335***
	(0.051)	(0.056)	(0.055)	(0.064)
Constant	-0.590***	-0.550***	-0.320**	0.024
	(0.150)	(0.125)	(0.130)	(0.161)
Number of observations	10 623	7 523	10 664	7 520
R-squared	0.57	0.65	0.53	0.59

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, and the omitted marital status category is 'Never married'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C9. Estimates used to perform the decomposition of the gender wage differential for full-time workers, 2001-2006: Specification II.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.041***	0.033***	0.050***	0.023***
	(0.006)	(0.005)	(0.006)	(0.007)
Age squared/1000	-0.421***	-0.313***	-0.524***	-0.225**
	(0.078)	(0.057)	(0.073)	(0.090)
Job duration	0.028***	0.035***	0.029***	0.033***
	(0.003)	(0.003)	(0.003)	(0.004)
Job duration squared/1000	-0.535***	-0.836***	-0.475***	-0.637***
	(0.091)	(0.110)	(0.098)	(0.140)
Primary education	0.140***	0.153***	0.115***	0.051
	(0.029)	(0.030)	(0.038)	(0.046)
Incomplete secondary education	0.346***	0.353***	0.272***	0.192***
	(0.033)	(0.033)	(0.041)	(0.049)
Matric (Grade 12) or equivalent	0.649***	0.640***	0.546***	0.467***
	(0.037)	(0.041)	(0.046)	(0.053)
Tertiary education	1.003***	0.969***	0.994***	0.856***
	(0.048)	(0.051)	(0.057)	(0.063)
Coloured	0.319***	0.246***	0.280***	0.251***
	(0.029)	(0.034)	(0.036)	(0.036)
Indian	0.391***	0.429***	0.568***	0.304***
	(0.047)	(0.044)	(0.091)	(0.051)
White	0.729***	0.560***	0.730***	0.522***
	(0.031)	(0.035)	(0.041)	(0.043)
Married/cohabiting	0.130***	0.056***	0.052**	0.070***
	(0.021)	(0.021)	(0.026)	(0.023)
Previously married	0.069	0.048*	-0.099	0.033
	(0.049)	(0.029)	(0.067)	(0.038)
Legislative/managerial	-0.002	0.149*	0.067	0.215**
	(0.076)	(0.086)	(0.081)	(0.091)
Technical and associate professionals	-0.250***	-0.247***	-0.286***	-0.162***
	(0.061)	(0.057)	(0.075)	(0.057)
Clerks	-0.423***	-0.351***	-0.463***	-0.346***
	(0.068)	(0.064)	(0.077)	(0.057)
Service/shop/sales workers	-0.657***	-0.739***	-0.693***	-0.702***
	(0.065)	(0.070)	(0.073)	(0.067)
Skilled agriculture and fishery	-0.431***	-0.734***	-0.742***	-0.615***
	(0.100)	(0.167)	(0.128)	(0.136)
Craft and related trades workers	-0.545***	-0.706***	-0.586***	-0.698***
	(0.065)	(0.079)	(0.075)	(0.081)
Plant and machine operators	-0.633***	-0.768***	-0.605***	-0.842***
	(0.065)	(0.078)	(0.075)	(0.080)
Elementary occupations	-0.740***	-0.764***	-0.727***	-0.761***
	(0.065)	(0.068)	(0.074)	(0.066)
Domestic workers	-0.419***	-0.523***	-0.593***	-0.487***
	(0.137)	(0.175)	(0.162)	(0.185)
Mining	0.884***	0.662***	0.862***	0.542***
	(0.034)	(0.095)	(0.043)	(0.138)
Manufacturing	0.788***	0.574***	0.564***	0.430***
	(0.031)	(0.042)	(0.038)	(0.053)
Utilities	0.869***	0.769***	0.743***	0.915***
	(0.104)	(0.116)	(0.074)	(0.105)
Construction	0.631***	0.599***	0.401***	0.131
	(0.038)	(0.104)	(0.043)	(0.100)
Wholesale/retail trade	0.531***	0.332***	0.328***	0.118**
	(0.033)	(0.039)	(0.038)	(0.046)
Transport	0.699***	0.687***	0.475***	0.437***
	(0.038)	(0.060)	(0.052)	(0.084)
Financial	0.736***	0.676***	0.396***	0.470***
	(0.045)	(0.048)	(0.049)	(0.057)
Community/social services	0.783***	0.645***	0.637***	0.432***
	(0.037)	(0.040)	(0.041)	(0.050)
Private households	-0.167*	-0.265	0.008	-0.321*
	(0.101)	(0.164)	(0.053)	(0.176)

Table C9. Continued.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Union member	0.291***	0.250***	0.271***	0.275***
	(0.020)	(0.026)	(0.023)	(0.028)
Eastern Cape	-0.315***	-0.392***	-0.317***	-0.340***
	(0.037)	(0.047)	(0.044)	(0.041)
Northern Cape	-0.258***	-0.392***	-0.233***	-0.287***
	(0.034)	(0.044)	(0.036)	(0.043)
Free State	-0.314***	-0.461***	-0.286***	-0.386***
	(0.037)	(0.049)	(0.045)	(0.047)
KwaZulu-Natal	-0.114***	-0.246***	-0.205***	-0.183***
	(0.036)	(0.045)	(0.046)	(0.041)
North West	-0.210***	-0.302***	-0.265***	-0.190***
	(0.036)	(0.048)	(0.045)	(0.047)
Gauteng	0.000	0.000	-0.014	0.066
	(0.036)	(0.045)	(0.042)	(0.043)
Mpumalanga	-0.121***	-0.336***	-0.159***	-0.229***
	(0.044)	(0.051)	(0.043)	(0.044)
Limpopo	-0.380***	-0.444***	-0.349***	-0.382***
	(0.043)	(0.049)	(0.047)	(0.053)
Constant	0.269*	0.530***	0.549***	1.153***
	(0.147)	(0.122)	(0.144)	(0.155)
Number of observations	10 220	7 332	10 555	7 450
R-squared	0.68	0.75	0.63	0.70

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C10. Estimates used to perform the decomposition of the gender wage differential for full-time workers, 2001-2006: Specification III.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.034***	0.031***	0.039***	0.019***
	(0.006)	(0.005)	(0.006)	(0.007)
Age squared/1000	-0.339***	-0.287***	-0.404***	-0.171**
	(0.070)	(0.057)	(0.073)	(0.086)
Job duration	0.011***	0.016***	0.011***	0.018***
	(0.003)	(0.003)	(0.003)	(0.004)
Job duration squared/1000	-0.163*	-0.401***	-0.152	-0.315**
	(0.092)	(0.107)	(0.100)	(0.137)
Primary education	0.116***	0.166***	0.116***	0.059
	(0.029)	(0.030)	(0.036)	(0.044)
Incomplete secondary education	0.296***	0.339***	0.221***	0.200***
	(0.032)	(0.033)	(0.039)	(0.047)
Matric (Grade 12) or equivalent	0.534***	0.558***	0.423***	0.418***
	(0.038)	(0.041)	(0.043)	(0.051)
Tertiary education	0.852***	0.859***	0.774***	0.753***
	(0.047)	(0.051)	(0.053)	(0.060)
Coloured	0.248***	0.201***	0.188***	0.165***
	(0.030)	(0.035)	(0.037)	(0.034)
Indian	0.329***	0.344***	0.476***	0.224***
	(0.036)	(0.042)	(0.084)	(0.049)
White	0.592***	0.446***	0.567***	0.406***
	(0.032)	(0.034)	(0.039)	(0.041)
Married/cohabiting	0.107***	0.056***	0.041*	0.067***
	(0.020)	(0.020)	(0.025)	(0.022)
Previously married	0.080*	0.042	-0.073	0.028
	(0.048)	(0.028)	(0.060)	(0.037)
Legislative/managerial	-0.005	0.082	-0.026	0.160*
	(0.072)	(0.081)	(0.075)	(0.084)
Technical and associate professionals	-0.232***	-0.230***	-0.342***	-0.163***
	(0.059)	(0.055)	(0.072)	(0.056)
Clerks	-0.442***	-0.329***	-0.530***	-0.331***
	(0.066)	(0.063)	(0.072)	(0.054)
Service/shop/sales workers	-0.603***	-0.652***	-0.720***	-0.601***
	(0.062)	(0.068)	(0.068)	(0.063)
Skilled agriculture and fishery	-0.302***	-0.631***	-0.736***	-0.424***
	(0.097)	(0.148)	(0.114)	(0.134)
Craft and related trades workers	-0.464***	-0.599***	-0.567***	-0.570***
	(0.062)	(0.081)	(0.070)	(0.075)
Plant and machine operators	-0.571***	-0.687***	-0.615***	-0.690***
	(0.063)	(0.076)	(0.070)	(0.075)
Elementary occupations	-0.648***	-0.691***	-0.711***	-0.640***
	(0.063)	(0.067)	(0.068)	(0.062)
Domestic workers	-0.271**	-0.399***	-0.590***	-0.280
	(0.137)	(0.153)	(0.178)	(0.188)
Mining	0.679***	0.449***	0.641***	0.331**
	(0.036)	(0.095)	(0.044)	(0.144)
Manufacturing	0.653***	0.468***	0.448***	0.353***
	(0.034)	(0.043)	(0.037)	(0.051)
Utilities	0.693***	0.701***	0.576***	0.675***
	(0.105)	(0.082)	(0.069)	(0.091)
Construction	0.657***	0.527***	0.480***	0.210**
	(0.039)	(0.119)	(0.043)	(0.098)
Wholesale/retail trade	0.494***	0.312***	0.298***	0.115**
	(0.033)	(0.041)	(0.036)	(0.046)
Transport	0.632***	0.536***	0.457***	0.361***
	(0.037)	(0.059)	(0.048)	(0.075)
Financial	0.645***	0.536***	0.335***	0.369***
	(0.047)	(0.049)	(0.046)	(0.058)
Community/social services	0.701***	0.524***	0.538***	0.351***
	(0.038)	(0.041)	(0.039)	(0.052)

Table C10. Continued.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Private households	0.000	-0.083	0.279***	-0.122
	(0.101)	(0.144)	(0.053)	(0.182)
Union member	0.074***	0.036	0.056**	0.083***
	(0.023)	(0.027)	(0.024)	(0.028)
Large firm	0.108***	0.049**	0.123***	0.033
	(0.019)	(0.024)	(0.024)	(0.025)
Formal sector	0.220***	0.232***	0.254***	0.282***
	(0.030)	(0.042)	(0.031)	(0.044)
Permanent employment	0.048**	0.042*	0.075***	0.019
	(0.025)	(0.025)	(0.029)	(0.027)
Pension fund contribution	0.180***	0.285***	0.158***	0.198***
	(0.025)	(0.029)	(0.031)	(0.030)
UIF contribution	0.074***	-0.019	0.207*	0.175
	(0.020)	(0.021)	(0.106)	(0.160)
Medical aid contribution	0.194***	0.120***	0.317***	0.268***
	(0.022)	(0.027)	(0.029)	(0.032)
Employee received paid leave	0.184***	0.258***	0.213***	0.235***
	(0.023)	(0.025)	(0.029)	(0.028)
Eastern Cape	-0.244***	-0.336***	-0.284***	-0.308***
	(0.038)	(0.047)	(0.042)	(0.038)
Northern Cape	-0.209***	-0.364***	-0.198***	-0.226***
	(0.035)	(0.044)	(0.035)	(0.043)
Free State	-0.265***	-0.424***	-0.278***	-0.343***
	(0.037)	(0.049)	(0.043)	(0.044)
KwaZulu-Natal	-0.087**	-0.214***	-0.193***	-0.156***
	(0.035)	(0.045)	(0.044)	(0.039)
North West	-0.149***	-0.277***	-0.230***	-0.205***
	(0.036)	(0.049)	(0.043)	(0.044)
Gauteng	0.005	-0.028	-0.037	0.030
	(0.036)	(0.045)	(0.041)	(0.040)
Mpumalanga	-0.088**	-0.303***	-0.170***	-0.232***
	(0.044)	(0.050)	(0.042)	(0.041)
Limpopo	-0.254***	-0.361***	-0.311***	-0.355***
	(0.044)	(0.049)	(0.045)	(0.052)
Constant	0.107	0.220*	0.283*	0.603***
	(0.134)	(0.127)	(0.170)	(0.220)
Number of observations	9 311	6 739	10 322	7 303
R-squared	0.72	0.77	0.68	0.73

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C11. Estimates used to perform the decomposition of the gender wage differential for part-time workers (domestic workers excluded), 2001-2006: Specification I.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.049**	0.035**	0.014	0.003
	(0.023)	(0.018)	(0.024)	(0.028)
Age squared/1000	-0.423	-0.477**	-0.130	-0.086
	(0.282)	(0.186)	(0.282)	(0.320)
Job duration	0.093***	0.070***	0.064***	0.026
	(0.019)	(0.015)	(0.016)	(0.021)
Job duration squared/1000	-2.481***	-1.102**	-1.329***	0.130
	(0.708)	(0.458)	(0.490)	(0.653)
Coloured	0.192	0.058	0.007	0.214
	(0.207)	(0.146)	(0.185)	(0.140)
Indian	0.379	0.016	0.522	1.519***
	(0.314)	(0.151)	(0.345)	(0.395)
White	0.491**	0.417***	0.516**	0.451***
	(0.210)	(0.126)	(0.263)	(0.130)
Primary education	0.221	0.512**	0.003	0.259
	(0.217)	(0.201)	(0.148)	(0.212)
Incomplete secondary education	0.690***	0.954***	0.615***	0.603***
	(0.237)	(0.190)	(0.171)	(0.201)
Matric (Grade 12) or equivalent	1.050***	1.494***	0.838***	0.835***
	(0.246)	(0.194)	(0.216)	(0.208)
Tertiary education	1.679***	2.027***	1.322***	1.685***
	(0.252)	(0.190)	(0.239)	(0.213)
Eastern Cape	-0.400*	-0.228	-0.135	-0.313**
	(0.227)	(0.177)	(0.217)	(0.154)
Northern Cape	-0.589***	0.100	-0.430**	-0.560***
	(0.217)	(0.231)	(0.201)	(0.161)
Free State	-0.342	-0.360*	-0.510**	-0.532***
	(0.246)	(0.191)	(0.230)	(0.201)
KwaZulu-Natal	-0.206	-0.182	-0.352*	-0.384**
	(0.227)	(0.167)	(0.211)	(0.166)
North West province	-0.207	-0.050	-0.346	0.618*
	(0.271)	(0.190)	(0.280)	(0.322)
Gauteng	-0.147	-0.110	0.084	0.056
	(0.222)	(0.179)	(0.232)	(0.158)
Mpumalanga	-0.197	-0.068	-0.177	-0.205
	(0.294)	(0.186)	(0.228)	(0.256)
Limpopo	-0.170	-0.099	0.123	-0.728***
	(0.265)	(0.204)	(0.298)	(0.213)
Married/cohabiting	0.197*	0.017	0.168	0.182
	(0.110)	(0.113)	(0.115)	(0.110)*
Previously married	-0.371	-0.108	-0.328	0.006
	(0.295)	(0.168)	(0.209)	(0.165)
Constant	0.037	0.124	1.183**	1.296**
	(0.507)	(0.438)	(0.484)	(0.605)
Number of observations	525	531	538	589
R-squared	0.40	0.53	0.39	0.61

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, and the omitted marital status category is 'Never married'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C12. Estimates used to perform the decomposition of the gender wage differential for part-time workers (domestic workers excluded), 2001-2006: Specification II.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.035*	0.028	0.000	0.002
	(0.020)	(0.021)	(0.022)	(0.030)
Age squared/1000	-0.309	-0.438*	0.021	-0.133
	(0.239)	(0.252)	(0.249)	(0.364)
Job duration	0.062***	0.058***	0.042**	0.017
	(0.021)	(0.013)	(0.017)	(0.021)
Job duration squared/1000	-1.660**	-0.959**	-0.851	0.102
	(0.795)	(0.401)	(0.525)	(0.606)
Primary education	0.067	0.293	-0.074	0.200
	(0.162)	(0.191)	(0.158)	(0.190)
Incomplete secondary education	0.319*	0.490***	0.338*	0.381**
	(0.193)	(0.188)	(0.179)	(0.191)
Matric (Grade 12) or equivalent	0.510**	0.831***	0.237	0.425**
	(0.235)	(0.212)	(0.198)	(0.210)
Tertiary education	0.793***	1.259***	0.515*	1.025***
	(0.270)	(0.252)	(0.269)	(0.222)
Coloured	0.168	0.027	-0.066	0.161
	(0.184)	(0.153)	(0.142)	(0.135)
Indian	0.281	-0.094	0.361	1.548***
	(0.329)	(0.162)	(0.407)	(0.313)
White	0.300	0.426***	0.607***	0.645***
	(0.199)	(0.132)	(0.216)	(0.124)
Married/cohabiting	0.111	0.027	0.035	0.062
	(0.096)	(0.115)	(0.101)	(0.101)
Previously married	-0.125	-0.061	-0.126	-0.105
	(0.229)	(0.155)	(0.209)	(0.147)
Legislative/managerial	0.405	0.927***	-0.097	-0.391
	(0.481)	(0.311)	(0.346)	(0.255)
Technical and associate professionals	-0.428*	-0.100	-0.440	-0.103
	(0.249)	(0.171)	(0.276)	(0.210)
Clerks	-0.314	-0.155	-0.767***	-0.852***
	(0.328)	(0.207)	(0.272)	(0.218)
Service/shop/sales workers	-0.351	-0.250	-0.802***	-0.893***
	(0.337)	(0.254)	(0.303)	(0.221)
Skilled agriculture and fishery	-0.654*	-0.520	-1.215**	-0.612**
	(0.364)	(0.385)	(0.495)	(0.257)
Craft and related trades workers	-0.329	-0.624**	-1.028***	-0.653**
	(0.351)	(0.296)	(0.326)	(0.273)
Plant and machine operators	-0.077	-0.266	-0.493	-0.963***
	(0.332)	(0.331)	(0.363)	(0.349)
Elementary occupations	-0.810***	-0.472*	-0.858***	-0.581***
	(0.308)	(0.248)	(0.301)	(0.222)
Mining	0.403	0.876***	0.154	-0.157
	(0.275)	(0.295)	(0.550)	(0.369)
Manufacturing	0.309	0.406	0.938***	0.074
	(0.254)	(0.254)	(0.248)	(0.253)
Utilities	0.939**	0.000	0.052	0.601*
	(0.378)	(0.000)	(0.263)	(0.317)
Construction	0.421*	0.114	0.803***	0.181
	(0.247)	(0.329)	(0.217)	(0.206)
Wholesale/retail trade	0.213	0.467***	0.540***	0.309
	(0.193)	(0.169)	(0.206)	(0.223)
Transport	0.265	0.188	0.444	0.613*
	(0.238)	(0.230)	(0.350)	(0.323)
Financial	0.158	0.588***	0.401	0.458*
	(0.278)	(0.193)	(0.276)	(0.253)
Community/social services	0.589***	0.416**	0.731***	0.244
	(0.201)	(0.176)	(0.224)	(0.221)
Private households	-0.373	-0.415	0.133	0.245
	(0.259)	(0.307)	(0.189)	(0.399)
Union member	0.208	0.415***	0.447***	0.506***
	(0.140)	(0.110)	(0.167)	(0.134)

Table C12. Continued.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Eastern Cape	-0.491**	-0.338*	-0.313*	-0.465***
	(0.218)	(0.183)	(0.180)	(0.145)
Northern Cape	-0.400**	0.017	-0.482***	-0.590***
	(0.178)	(0.236)	(0.169)	(0.158)
Free State	-0.173	-0.346*	-0.440**	-0.510**
	(0.209)	(0.193)	(0.198)	(0.211)
KwaZulu-Natal	-0.277	-0.111	-0.390**	-0.470***
	(0.201)	(0.174)	(0.182)	(0.144)
North West	-0.200	-0.149	-0.277	0.432
	(0.248)	(0.199)	(0.253)	(0.295)
Gauteng	-0.092	-0.134	0.165	0.068
	(0.195)	(0.181)	(0.180)	(0.158)
Mpumalanga	-0.422*	-0.108	-0.025	-0.130
	(0.248)	(0.204)	(0.211)	(0.209)
Limpopo	-0.354	-0.215	0.062	-0.829***
	(0.245)	(0.213)	(0.263)	(0.193)
Constant	1.179*	0.714	2.121***	2.126***
	(0.602)	(0.527)	(0.615)	(0.680)
Number of observations	513	521	536	587
R-squared	0.55	0.60	0.55	0.69

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C13. Estimates used to perform the decomposition of the gender wage differential for part-time workers (domestic workers excluded), 2001-2006: Specification III.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.032*	0.025	-0.008	0.014
	(0.017)	(0.023)	(0.019)	(0.029)
Age squared/1000	-0.322	-0.382	0.146	-0.273
	(0.208)	(0.275)	(0.223)	(0.355)
Job duration	0.032*	0.039***	0.033**	0.007
	(0.018)	(0.015)	(0.017)	(0.021)
Job duration squared/1000	-0.846	-0.385	-0.791	0.145
	(0.643)	(0.439)	(0.509)	(0.589)
Primary education	-0.097	0.283	-0.087	0.200
	(0.169)	(0.180)	(0.136)	(0.175)
Incomplete secondary education	0.175	0.395**	0.254*	0.377**
	(0.190)	(0.169)	(0.147)	(0.182)
Matric (Grade 12) or equivalent	0.202	0.645***	0.223	0.375*
	(0.218)	(0.214)	(0.163)	(0.203)
Tertiary education	0.621**	1.172***	0.491**	0.977***
	(0.244)	(0.238)	(0.244)	(0.220)
Coloured	0.032	-0.113	-0.124	0.107
	(0.173)	(0.148)	(0.136)	(0.135)
Indian	0.379	0.061	0.381	1.496***
	(0.302)	(0.198)	(0.385)	(0.330)
White	0.059	0.151	0.423**	0.636***
	(0.189)	(0.144)	(0.208)	(0.118)
Married/cohabiting	0.125	0.044	-0.014	0.054
	(0.096)	(0.115)	(0.101)	(0.099)
Previously married	-0.016	-0.143	-0.167	-0.096
	(0.195)	(0.166)	(0.222)	(0.141)
Legislative/managerial	0.179	0.802**	-0.259	-0.682**
	(0.436)	(0.376)	(0.341)	(0.293)
Technical and associate professionals	-0.389	-0.112	-0.463*	-0.033
	(0.292)	(0.171)	(0.240)	(0.226)
Clerks	-0.212	-0.135	-0.817***	-0.882***
	(0.339)	(0.211)	(0.241)	(0.222)
Service/shop/sales workers	-0.093	-0.139	-0.811***	-0.916***
	(0.346)	(0.266)	(0.269)	(0.224)
Skilled agriculture and fishery	-0.118	-0.522*	-1.111**	-0.630**
	(0.370)	(0.285)	(0.503)	(0.270)
Craft and related trades workers	0.062	-0.496	-1.018***	-0.556**
	(0.394)	(0.316)	(0.281)	(0.272)
Plant and machine operators	0.204	-0.316	-0.470	-0.954***
	(0.350)	(0.312)	(0.317)	(0.366)
Elementary occupations	-0.534	-0.418	-0.862***	-0.581**
	(0.324)	(0.254)	(0.263)	(0.229)
Mining	0.464	0.885***	-0.022	-0.110
	(0.311)	(0.326)	(0.521)	(0.350)
Manufacturing	0.184	0.342	0.786***	-0.006
	(0.249)	(0.254)	(0.231)	(0.252)
Utilities	0.916***	0.000	-0.085	0.542*
	(0.324)	(0.000)	(0.255)	(0.316)
Construction	0.424	0.129	0.892***	0.203
	(0.270)	(0.292)	(0.204)	(0.204)
Wholesale/retail trade	0.281	0.495***	0.501**	0.333
	(0.197)	(0.181)	(0.197)	(0.215)
Transport	0.352	0.224	0.395	0.552**
	(0.232)	(0.241)	(0.317)	(0.263)
Financial	0.170	0.567***	0.390	0.323
	(0.270)	(0.216)	(0.271)	(0.251)
Community/social services	0.649***	0.378**	0.604***	0.198
	(0.197)	(0.190)	(0.210)	(0.218)
Private households	-0.181	0.078	0.351*	0.461
	(0.251)	(0.167)	(0.192)	(0.387)

Table C13. Continued.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Union member	-0.452**	0.153	0.075	0.266*
	(0.185)	(0.140)	(0.150)	(0.147)
Large firm	0.038	0.258**	0.204*	-0.057
	(0.131)	(0.105)	(0.122)	(0.118)
Formal sector	0.425***	0.415**	0.243**	0.199
	(0.153)	(0.171)	(0.120)	(0.129)
Permanent employment	0.107	0.002	0.096	0.153
	(0.109)	(0.134)	(0.112)	(0.121)
Pension fund contribution	0.442**	0.172	0.167	0.444***
	(0.178)	(0.145)	(0.184)	(0.142)
UIF contribution	0.053	0.152*	0.000	0.026
	(0.105)	(0.091)	(0.000)	(0.214)
Medical aid contribution	0.178	-0.090	0.382**	-0.062
	(0.160)	(0.102)	(0.157)	(0.157)
Employee received paid leave	0.468***	0.325***	0.011	-0.190
	(0.152)	(0.125)	(0.193)	(0.122)
Eastern Cape	-0.547***	-0.226	-0.308*	-0.536***
	(0.196)	(0.171)	(0.177)	(0.151)
Northern Cape	-0.424**	-0.123	-0.527***	-0.582***
	(0.199)	(0.236)	(0.166)	(0.170)
Free State	-0.339	-0.180	-0.433**	-0.573***
	(0.207)	(0.197)	(0.200)	(0.221)
KwaZulu-Natal	-0.471**	-0.108	-0.335	-0.533***
	(0.185)	(0.172)	(0.189)*	(0.151)
North West	-0.300	0.106	-0.300	0.322
	(0.240)	(0.208)	(0.254)	(0.273)
Gauteng	-0.299*	-0.185	0.149	0.040
	(0.178)	(0.190)	(0.185)	(0.165)
Mpumalanga	-0.538**	-0.124	-0.055	-0.220
	(0.246)	(0.195)	(0.206)	(0.204)
Limpopo	-0.495**	-0.223	0.053	-0.896***
	(0.230)	(0.234)	(0.260)	(0.196)
Constant	0.928*	0.324	2.088***	1.789***
	(0.539)	(0.558)	(0.512)	(0.615)
Observations	468	463	527	577
R-squared	0.63	0.66	0.59	0.71

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C14. Estimates used to perform the decomposition of the gender wage differential for full-time workers (domestic workers excluded), 2001-2006: Specification I.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.063***	0.045***	0.066***	0.037***
	(0.008)	(0.007)	(0.006)	(0.009)
Age squared/1000	-0.671***	-0.446***	-0.676***	-0.367***
	(0.093)	(0.080)	(0.077)	(0.120)
Job duration	0.052***	0.060***	0.048***	0.052***
	(0.003)	(0.004)	(0.004)	(0.005)
Job duration squared/1000	-1.077***	-1.358***	-0.784***	-0.920***
	(0.099)	(0.147)	(0.110)	(0.184)
Primary education	0.345***	0.240***	0.238***	0.088
	(0.040)	(0.060)	(0.046)	(0.084)
Incomplete secondary education	0.734***	0.664***	0.534***	0.401***
	(0.041)	(0.060)	(0.047)	(0.082)
Matric (Grade 12) or equivalent	1.173***	1.235***	0.916***	0.940***
	(0.044)	(0.062)	(0.050)	(0.083)
Tertiary education	1.821***	1.846***	1.708***	1.652***
	(0.049)	(0.062)	(0.059)	(0.083)
Coloured	0.255***	0.292***	0.279***	0.370***
	(0.036)	(0.043)	(0.039)	(0.043)
Indian	0.476***	0.475***	0.606***	0.355***
	(0.048)	(0.053)	(0.093)	(0.057)
White	0.799***	0.673***	0.792***	0.647***
	(0.032)	(0.035)	(0.043)	(0.046)
Married/cohabiting	0.160***	0.128***	0.082***	0.122***
	(0.025)	(0.029)	(0.028)	(0.031)
Previously married	0.077	0.154***	-0.135*	0.094*
	(0.053)	(0.040)	(0.073)	(0.051)
Eastern Cape	-0.336***	-0.218***	-0.257***	-0.196***
	(0.044)	(0.058)	(0.048)	(0.049)
Northern Cape	-0.383***	-0.305***	-0.203***	-0.205***
	(0.043)	(0.058)	(0.042)	(0.051)
Free State	-0.272***	-0.331***	-0.157***	-0.199***
	(0.045)	(0.062)	(0.050)	(0.054)
KwaZulu-Natal	-0.127***	-0.167***	-0.156***	-0.074
	(0.041)	(0.055)	(0.052)	(0.049)
North West province	-0.091**	-0.186***	-0.133**	-0.044
	(0.043)	(0.062)	(0.053)	(0.054)
Gauteng	0.104***	0.115**	0.061	0.228***
	(0.040)	(0.054)	(0.047)	(0.053)
Mpumalanga	-0.085*	-0.319***	-0.111**	-0.132**
	(0.049)	(0.063)	(0.049)	(0.054)
Limpopo	-0.454***	-0.392***	-0.260***	-0.253***
	(0.051)	(0.064)	(0.055)	(0.062)
Constant	-0.582***	-0.407***	-0.318**	0.084
	(0.150)	(0.145)	(0.131)	(0.189)
Number of observations	10 571	5 731	10 639	6 074
R-squared	0.57	0.60	0.53	0.56

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, and the omitted marital status category is 'Never married'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C15. Estimates used to perform the decomposition of the gender wage differential for full-time workers (domestic workers excluded), 2001-2006: Specification II.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.041***	0.030***	0.050***	0.020**
	(0.006)	(0.006)	(0.006)	(0.009)
Age squared/1000	-0.416***	-0.288***	-0.523***	-0.206*
	(0.078)	(0.067)	(0.074)	(0.110)
Job duration	0.028***	0.038***	0.029***	0.033***
	(0.003)	(0.004)	(0.003)	(0.005)
Job duration squared/1000	-0.541***	-0.907***	-0.475***	-0.600***
	(0.091)	(0.129)	(0.098)	(0.158)
Primary education	0.137***	0.136***	0.115***	0.054
	(0.029)	(0.047)	(0.038)	(0.075)
Incomplete secondary education	0.343***	0.329***	0.271***	0.187**
	(0.033)	(0.050)	(0.041)	(0.077)
Matric (Grade 12) or equivalent	0.647***	0.645***	0.544***	0.490***
	(0.038)	(0.057)	(0.046)	(0.080)
Tertiary education	1.000***	0.968***	0.992***	0.874***
	(0.048)	(0.063)	(0.057)	(0.086)
Coloured	0.319***	0.281***	0.282***	0.308***
	(0.029)	(0.038)	(0.036)	(0.038)
Indian	0.390***	0.420***	0.569***	0.318***
	(0.047)	(0.046)	(0.091)	(0.052)
White	0.729***	0.567***	0.731***	0.534***
	(0.032)	(0.036)	(0.041)	(0.044)
Married/cohabiting	0.132***	0.077***	0.052**	0.081***
	(0.021)	(0.025)	(0.026)	(0.027)
Previously married	0.074	0.067*	-0.100	0.065
	(0.050)	(0.037)	(0.067)	(0.046)
Legislative/managerial	-0.002	0.146*	0.067	0.215**
	(0.076)	(0.086)	(0.081)	(0.091)
Technical and associate professionals	-0.250***	-0.247***	-0.286***	-0.165***
	(0.061)	(0.057)	(0.075)	(0.057)
Clerks	-0.423***	-0.350***	-0.463***	-0.350***
	(0.068)	(0.065)	(0.077)	(0.057)
Service/shop/sales workers	-0.657***	-0.725***	-0.693***	-0.696***
	(0.065)	(0.070)	(0.073)	(0.067)
Skilled agriculture and fishery	-0.432***	-0.727***	-0.742***	-0.582***
	(0.100)	(0.167)	(0.128)	(0.136)
Craft and related trades workers	-0.545***	-0.697***	-0.586***	-0.683***
	(0.065)	(0.080)	(0.075)	(0.080)
Plant and machine operators	-0.633***	-0.753***	-0.605***	-0.825***
	(0.065)	(0.078)	(0.075)	(0.080)
Elementary occupations	-0.740***	-0.748***	-0.728***	-0.746***
	(0.065)	(0.068)	(0.074)	(0.066)
Mining	0.885***	0.671***	0.863***	0.527***
	(0.034)	(0.089)	(0.043)	(0.139)
Manufacturing	0.789***	0.578***	0.565***	0.427***
	(0.032)	(0.043)	(0.038)	(0.054)
Utilities	0.870***	0.764***	0.743***	0.899***
	(0.104)	(0.118)	(0.074)	(0.106)
Construction	0.631***	0.600***	0.401***	0.120
	(0.038)	(0.104)	(0.043)	(0.100)
Wholesale/retail trade	0.532***	0.337***	0.329***	0.116**
	(0.033)	(0.040)	(0.038)	(0.047)
Transport	0.700***	0.695***	0.475***	0.429***
	(0.038)	(0.061)	(0.052)	(0.086)
Financial	0.738***	0.680***	0.397***	0.463***
	(0.045)	(0.049)	(0.049)	(0.058)
Community/social services	0.784***	0.643***	0.638***	0.425***
	(0.037)	(0.041)	(0.041)	(0.051)
Private households	-0.167*	-0.259	0.008	-0.322*
	(0.101)	(0.162)	(0.053)	(0.177)
Union member	0.290***	0.241***	0.270***	0.278***
	(0.020)	(0.026)	(0.023)	(0.028)

Table C15. Continued

	2001		2006	
	Men	**Women**	**Men**	**Women**
Eastern Cape	-0.312***	-0.294***	-0.313***	-0.247***
	(0.038)	(0.055)	(0.044)	(0.044)
Northern Cape	-0.257***	-0.319***	-0.232***	-0.221***
	(0.034)	(0.053)	(0.036)	(0.048)
Free State	-0.314***	-0.375***	-0.284***	-0.300***
	(0.037)	(0.058)	(0.045)	(0.050)
KwaZulu-Natal	-0.114***	-0.195***	-0.203***	-0.132***
	(0.036)	(0.051)	(0.046)	(0.044)
North West	-0.208***	-0.256***	-0.263***	-0.127***
	(0.036)	(0.055)	(0.045)	(0.048)
Gauteng	0.000	0.030	-0.011	0.146***
	(0.036)	(0.050)	(0.042)	(0.047)
Mpumalanga	-0.120***	-0.346***	-0.156***	-0.176***
	(0.044)	(0.057)	(0.043)	(0.048)
Limpopo	-0.380***	-0.395***	-0.347***	-0.270***
	(0.043)	(0.057)	(0.047)	(0.054)
Constant	0.276	0.510***	0.546***	1.119***
	(0.147)*	(0.140)	(0.144)	(0.183)
Number of observations	10 170	5 554	10 530	6 011
R-squared	0.68	0.68	0.63	0.65

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

Table C16. Estimates used to perform the decomposition of the gender wage differential for full-time workers (domestic workers excluded), 2001-2006: Specification III.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Age	0.033***	0.028***	0.039***	0.015*
	(0.006)	(0.006)	(0.006)	(0.008)
Age squared/1000	-0.333***	-0.246***	-0.405***	-0.131
	(0.070)	(0.067)	(0.073)	(0.107)
Job duration	0.011***	0.014***	0.011***	0.017***
	(0.003)	(0.004)	(0.003)	(0.005)
Job duration squared/1000	-0.166*	-0.380***	-0.149	-0.276*
	(0.093)	(0.125)	(0.101)	(0.156)
Primary education	0.112***	0.151***	0.116***	0.040
	(0.029)	(0.048)	(0.036)	(0.071)
Incomplete secondary education	0.292***	0.307***	0.220***	0.173**
	(0.033)	(0.051)	(0.039)	(0.072)
Matric (Grade 12) or equivalent	0.532***	0.544***	0.419***	0.405***
	(0.038)	(0.057)	(0.043)	(0.075)
Tertiary education	0.849***	0.840***	0.771***	0.739***
	(0.047)	(0.064)	(0.053)	(0.080)
Coloured	0.248***	0.211***	0.191***	0.209***
	(0.030)	(0.040)	(0.037)	(0.036)
Indian	0.328***	0.333***	0.476***	0.242***
	(0.036)	(0.044)	(0.084)	(0.051)
White	0.591***	0.441***	0.568***	0.417***
	(0.032)	(0.034)	(0.039)	(0.042)
Married/cohabiting	0.108***	0.083***	0.041*	0.079***
	(0.021)	(0.025)	(0.025)	(0.025)
Previously married	0.085*	0.064*	-0.074	0.048
	(0.049)	(0.035)	(0.060)	(0.044)
Legislative/managerial	-0.006	0.076	-0.026	0.162*
	(0.072)	(0.080)	(0.075)	(0.084)
Technical and associate professionals	-0.232***	-0.233***	-0.341***	-0.165***
	(0.059)	(0.056)	(0.072)	(0.055)
Clerks	-0.443***	-0.333***	-0.529***	-0.335***
	(0.066)	(0.063)	(0.072)	(0.054)
Service/shop/sales workers	-0.603***	-0.642***	-0.720***	-0.594***
	(0.062)	(0.068)	(0.068)	(0.063)
Skilled agriculture and fishery	-0.302***	-0.639***	-0.736***	-0.384***
	(0.097)	(0.148)	(0.114)	(0.135)
Craft and related trades workers	-0.464***	-0.598***	-0.567***	-0.556***
	(0.062)	(0.082)	(0.070)	(0.074)
Plant and machine operators	-0.571***	-0.683***	-0.615***	-0.671***
	(0.063)	(0.076)	(0.070)	(0.074)
Elementary occupations	-0.648***	-0.687***	-0.712***	-0.627***
	(0.063)	(0.068)	(0.068)	(0.062)
Mining	0.680***	0.452***	0.642***	0.312**
	(0.036)	(0.089)	(0.044)	(0.144)
Manufacturing	0.654***	0.476***	0.449***	0.351***
	(0.034)	(0.044)	(0.037)	(0.052)
Utilities	0.693***	0.696***	0.576***	0.661***
	(0.105)	(0.083)	(0.069)	(0.094)
Construction	0.658***	0.534***	0.480***	0.208**
	(0.039)	(0.117)	(0.043)	(0.097)
Wholesale/retail trade	0.495***	0.319***	0.298***	0.113**
	(0.033)	(0.042)	(0.036)	(0.048)
Transport	0.634***	0.548***	0.458***	0.359***
	(0.037)	(0.059)	(0.048)	(0.076)
Financial	0.646***	0.541***	0.335***	0.362***
	(0.047)	(0.050)	(0.046)	(0.059)
Community/social services	0.701***	0.526***	0.539***	0.346***
	(0.038)	(0.042)	(0.039)	(0.053)
Private households	0.003	-0.029	0.280***	-0.083
	(0.101)	(0.144)	(0.053)	(0.186)

Table C16. Continued.

	2001		2006	
	Men	**Women**	**Men**	**Women**
Union member	0.073***	0.025	0.054**	0.080***
	(0.023)	(0.027)	(0.024)	(0.029)
Large firm	0.109***	0.050**	0.123***	0.029
	(0.019)	(0.025)	(0.024)	(0.025)
Formal sector	0.224***	0.308***	0.257***	0.337***
	(0.030)	(0.046)	(0.031)	(0.048)
Permanent employment	0.048*	0.037	0.075***	0.008
	(0.025)	(0.035)	(0.029)	(0.034)
Pension fund contribution	0.180***	0.279***	0.159***	0.219***
	(0.025)	(0.032)	(0.031)	(0.033)
UIF contribution	0.074***	-0.014	0.206*	0.158
	(0.020)	(0.023)	(0.106)	(0.188)
Medical aid contribution	0.194***	0.128***	0.318***	0.262***
	(0.022)	(0.028)	(0.029)	(0.032)
Employee received paid leave	0.185***	0.268***	0.213***	0.232***
	(0.023)	(0.032)	(0.029)	(0.033)
Eastern Cape	-0.240***	-0.234***	-0.280***	-0.217***
	(0.038)	(0.054)	(0.042)	(0.041)
Northern Cape	-0.207***	-0.262***	-0.197***	-0.149***
	(0.035)	(0.054)	(0.035)	(0.048)
Free State	-0.266***	-0.337***	-0.275***	-0.254***
	(0.037)	(0.057)	(0.043)	(0.047)
KwaZulu-Natal	-0.087**	-0.173***	-0.190***	-0.117***
	(0.035)	(0.051)	(0.044)	(0.041)
North West	-0.149***	-0.238***	-0.227***	-0.152***
	(0.036)	(0.056)	(0.043)	(0.047)
Gauteng	0.004	-0.018	-0.033	0.104**
	(0.036)	(0.050)	(0.041)	(0.044)
Mpumalanga	-0.087**	-0.327***	-0.166***	-0.185***
	(0.045)	(0.056)	(0.042)	(0.045)
Limpopo	-0.253***	-0.308***	-0.308***	-0.250***
	(0.044)	(0.056)	(0.045)	(0.052)
Constant	0.113	0.184	0.278	0.602**
	(0.134)	(0.143)	(0.171)	(0.261)
Number of observations	9 262	5 066	10 297	5 894
R-squared	0.72	0.72	0.68	0.70

Source: September LFSs: 2001 and 2006.

Notes: The sample is restricted to persons older than 15 years with wage employment, who reported non-zero working hours of less than 113 hours a week and for whom earnings information is not missing. The data are weighted. Robust standard errors are presented in parentheses. The omitted population group is 'African', the omitted education category is 'No schooling'; the omitted province is the Western Cape, the omitted marital status category is 'Never married', the omitted occupational category is 'Professionals' and the omitted industry category is 'Agriculture'. *** Significant at 1%, ** significant at 5%, * significant at 10%.

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