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Minimum Wages as a Mechanism for Gender Pay Equity: The Role of Gender in Predicting Labour Market Outcomes from the Minimum Wage in South Africa's Retail and Agricultural Sectors

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Abstract

Do minimum wages promote greater equity in pay in a developing country context? This paper seeks to answer this question through employing two difference-in-difference (DID) regression techniques to uncover the gendered impact of South Africa's Sectoral Wage Determinations ('sectoral minimum wages' hereafter) on real hourly wages over the period 2001-2007 and establish whether these minimum wage laws reduced gender pay gaps among covered workers. The gender-specific effects of minimum wages on employment, hours worked, and written contract coverage are also explored. The sectors analysed are the retail and agricultural sectors – both of which employ a fairly equal share of men and women, who are similar across several characteristics. Furthermore, examining these two sectors offers a unique opportunity to investigate whether a more "blanket" minimum wage is better suited to reducing gender pay discrepancies compared to multiple minimum wage schedules determined by various factors. For the agricultural sector, sectoral minimum wages were only set according to area (resulting in 2 minimum wage schedules), while for the retail sector, minimum wages were established according to occupation, hours worked, firm size and area (resulting in a total of 96 minimum wage schedules over the period of analysis). This paper finds that sectoral minimum wages had no significant impact on the employment of men or women in the retail and agricultural sectors. Descriptive results indicate that the gender wage gap marginally increased among retail workers following the implementation of minimum wages. The regression analysis reflects this finding, as men experience greater gains in wages relative to women in areas where the median wage falls further below the minimum wage (i.e., where the minimum wage is more binding). In contrast, the descriptive findings suggest that the gender wage gap reduced significantly among agricultural workers. The regression results mirror these results – one DID specification reveals that women in the agricultural sector reap significant improvements in their wages, while no significant effect is found for men. The other DID specification indicates that both men and women in areas where the minimum wage is more binding experience greater improvements in their wages; however, women experience slightly greater increases. No significant effect is shown for women using this specification. In terms of hours worked, men in the retail sector experience significant improvements in their working hours, whereas women endure significant declines. The opposite holds true for the agricultural sector. The above findings possibly suggest that a more "blanket" minimum wage may contribute to fostering greater gender equity in pay. Conversely, minimum wages set according to factors such as occupation may lead to the exacerbation of gender pay disparities. Nevertheless, there may be other differences between the retail and agricultural sectors that explain the disparities in the impact of sectoral minimum wage laws. While minimum wage violation (both in terms of incidence and depth) appears to be fairly similar among men and women (although slightly higher for women) – non-compliance rates are staggeringly high, especially among agricultural workers. This finding underscores the need for stricter monitoring and enforcement of minimum wages in South Africa.

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1. Introduction

Minimum wages have long been recognized as a powerful policy tool for protecting vulnerable workers from unacceptably low pay. However, increasing recognition is being paid to their promising role in reducing pay discrepancies between men and women. Rubery and Grimshaw (2009:1) assert that "a statutory minimum wage can provide an important counterweight to the gendered effects of institutions on the supply and demand sides of the labour market that produce and sustain gender inequities in pay and employment." Essentially, these authors argue that there are various factors – stemming from both the demand (employers) and supply (workers) side[1] of the labour market – which act to disadvantage women relative to men in terms of pay. Consequently, women tend to predominate in low-paid occupations, and even within these low-paid occupations, they typically earn lower wages than their male counterparts (Rubery and Grimshaw, 2009). This suggests that women are more likely to benefit from minimum wage laws and that minimum wages may serve as a promising instrument to counter both demand-and supply-side factors contributing to the undervaluation of women's work.

Nevertheless, there are a few variables that may hinder the effectiveness of minimum wages in addressing gender pay disparities. As noted, among low-wage workers (the likely beneficiaries of minimum wages), women's wages tend to fall the furthest below the mandated wage floor – thus requiring the greatest increases on average to meet the minimum wage. This suggests that women may be at higher risk of the potential adverse consequences of minimum wages – which are unemployment, reduction in hours worked and employment benefits. Similarly, the greater pay rises for women could also make them more vulnerable to non-compliance relative to men. In addition, factors such as differences in the type of employers or firms men and women work for (or differences in how men and women are treated or regarded by employers), may also lead to disparities in the impact of minimum wages between men and women.

Further, in contexts where minimum wages are determined according to variables such as occupation (rather than a blanket minimum wage for all workers) and women tend to predominate in the lowest paying occupations – minimum wages may result in the wage floors for "female-dominated" occupations being lower on average compared to those of "male-dominated" occupations. As such, the above clearly highlights that certain labour market characteristics may undermine the potential equality-enhancing effects of minimum wages.

Only a handful of studies to date have empirically assessed the relationship between minimum wages and the gender pay gap. Most of these papers find that minimum wages lead to reductions in the gender pay gap, particularly amongst those at the lower end of the earnings distribution. However, a few papers also find that minimum wages resulted in greater employment losses among women compared to men. It is important to highlight that the majority of studies assessing the impact of minimum wages on gender pay gaps cover developed countries, with only a handful investigating this relationship for developing nations – none of which are an

[1] Demand-side factors may include discriminatory hiring practices, unequal pay structures and societal valuation of female-dominated occupations versus male-dominated occupations. Supply-side factors may include women's versus men's selection into certain fields of study and/or occupations and social norms influencing women's workforce participation (such as taking on a disproportionate share of caregiving responsibilities which may require them to either choose occupations that are more flexible and less demanding or even take career breaks, thus limiting their potential wage growth).

African economy[2]. Given that there are likely to be important differences in the labour markets and institutions governing these labour markets between developing and developed economies – the dearth of research on this topic for developing countries (and none for African nations) emphasizes a need for more empirical investigations into how minimum wages affect gender wage gaps in these contexts.

Furthermore, most of this research simply assesses the impact of minimum wages on gender wage gaps and does not investigate whether minimum wages affect men and women differently in terms of shifts in employment and hours worked, as well as whether there are differences in compliance rates between men and women. In addition, no paper compares the effects of a "blanket" minimum wage for all workers versus multiple minimum wage schedules determined according to factors such as occupation, firm size and/or hours worked on gender pay disparities.

This paper aims to investigate whether South Africa's sectoral minimum wages[3] had differential impacts – in terms of changes in wages, employment, hours worked[4] and written contract coverage[5] – on men and women, as well as if these minimum wages led to reductions in the gender pay gap amongst covered workers. Specifically, the sectors analysed are the retail and agricultural (farmworkers) sectors – as they contain a relatively equal share of men and women, who are similar across various characteristics (such as skill level, education level, occupation, and age). This allows for the gender-specific impacts of minimum wages to be more accurately captured.

In addition, the structure of the sectoral minimum wages differed slightly between these two sectors – whereby retail workers' wage floors were established according to occupation, whether an individual is a part-time or full-time worker, firm size, and area, while the minimum wages for farmworkers were determined according to area only. As such, analysing these two sectors in particular allow for a better understanding of how more "targeted" minimum wages may compare to more "blanket" minimum wages in terms of their effects on gender pay gaps.

Nevertheless, it is important to flag that the workers in these two sectors are not entirely similar, as well as the way in which the two sectors operate and the type of employers belonging to each sector will likely be different. Thus, any disparities observed (in terms of the impact of minimum wages) between the two sectors may be explained by the differences in minimum wage schedules but could also be explained by other differences between the sectors.

The current South African literature on these sectoral minimum wages has found that for most of the sectors studied, minimum wages have resulted in higher wages on average for covered workers, with no significant employment losses or major adjustments in hours worked.

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[2] However, there is one study set in Mauritius, which investigates whether minimum wages affect the employment levels of men and women differently (but does not assess the impact on gender pay gaps).

[3] The South African minimum wage system prior to the introduction of a national minimum wage in 2019.

[4] This analysis examines the impact on hours worked as employers may reduce employees' working hours (as opposed to resorting to layoffs) in order to manage the increased labour costs required by the minimum wage bill.

[5] Along with setting mandatory wage floors, South Africa's Sectoral Determinations required employers to provide their employees with a written contract that details the particulars of employment.

However, several papers have detected that the introduction of minimum wages for farmworkers in 2003 (as well as the subsequent 52% increase of these minimum wages in 2013) has led to significant employment losses for this group. Another finding worth noting is that aggregate non-compliance with sectoral minimum wages ranged between 40 to 50% (Bhorat et al., 2016). Nevertheless, as indicated above, no paper has explored how these sectoral minimum wages impact women relative to men, and whether they led to reductions in the gender wage gap among the minimum wage beneficiaries.

In South Africa, women continue to predominate in low-paid and low-skilled occupations (Benjamin, 2015). Further, among low-paid workers women typically earn less than their male counterparts – even when their qualifications are comparable (Casale & Posel, 2005). In fact, women are more likely to be classified as being part of the "working poor" (those who earn less than 2 USD per day) in South Africa (Casale & Posel, 2005). Additionally, South African women take on the lion's share of unpaid work, which typically requires them to select into jobs that offer more flexible working arrangements, are less demanding and offer part-time hours – all of which are typically associated with lower wages (Benjamin, 2015). Requiring these specific working conditions may also limit the work opportunities available to women and thus likely forces them to accept lower paying jobs (Rubery & Grimshaw, 2009; Benjamin, 2015). Women's unpaid work responsibilities may also require them to take career breaks and invest less in their career in general, both of which could contribute to restricting their career advancement and subsequent wage growth (Benjamin, 2015).

South African women are also less likely to be unionised than men, with women in low-paid and low-skilled jobs being especially unlikely to be union members (Benjamin, 2015; Kerr & Wittenberg, 2021). This suggests that they are less likely to benefit from collective bargaining processes, whereby unions negotiate for better terms of employment and pay with employers on behalf of the employees (Benjamin, 2015). In South Africa, an increasing share of households are female-headed households - whereby women are the primary breadwinners and decision-makers (Posel, Hall & Goagoses, 2023). These households are poorer on average compared to male-headed households and are more likely to support children (Posel, Hall & Goagoses, 2023). All of the above suggests that women are likely to serve as the primary beneficiaries of minimum wage laws or rather, may benefit more from these laws on average compared to men in the South African context. The above also underscores the need for sufficient mandatory wage floors, especially for low-skilled and low-paid South African women, to ensure they can support themselves and their families adequately.

This paper is structured as follows: section 2 provides a succinct review of both the international and South African minimum wage literature, as well as the empirical and theoretical literature on the relationship between minimum wages and the gender wage gap. Section 3 outlines the dataset and methods used to conduct the analysis outlined above. Section 4 provides a descriptive overview of how the wages, employment levels, hours worked, and written contract coverage changed between the pre- and post-law periods for men and women in the retail and agricultural sectors. Minimum wage violation (in terms of both incidence and depth) in the post-law period is also investigated in this section, as well as whether there were any shifts in the gender wage gap for each sector between the pre- and post-law periods. Section 5 presents the

regression analysis for this paper – whereby the regression models described in section 3 are employed to measure the impact of minimum wages on the wages, employment levels, hours worked, and written contract coverage on men and women in the two sectors. A thorough discussion of the descriptive and regression results is provided in section 6. Lastly, section 7 concludes the paper and discusses some recommendations for future research.

2. Literature Review

2.1 Minimum Wage Debate

The bulk of empirical research on minimum wages has focused on whether the enactment of minimum wages results in significant job losses among low-wage workers, as hypothesized by Neoclassical economic theory (Manning, 2016; Grau, Miranda & Puentes, 2018). Until the early 1990s, most scholars subscribed to the Neoclassical position and thus, held a pessimistic view on minimum wages and its' role in improving the economic welfare of low wage workers (Manning, 2016; Grau, Miranda & Puentes, 2018). However, the studies conducted during the Neoclassical reign were criticised for not having a "true control group" with which to compare those who were beneficiaries of minimum wage legislation (Grau, Miranda & Puentes, 2018). Put differently, these studies were limited in their ability to identify a causal relationship between minimum wages and employment.

Since the early 1990s, the influential studies by Card (1992) and Katz and Krueger (1992), as well as Card and Krueger (1994), heralded the era of 'the New Minimum Wage Research'. These authors addressed the concern of causality by employing quasi-experimental methods and found that minimum wage hikes do not necessarily result in adverse employment effects for low-wage workers in the United States. These findings triggered a wave of empirical investigations to establish some consensus on the impact of minimum wages, particularly with respect to its' effects on employment. In short, results have differed considerably between studies (and countries), ranging from those with small positive employment impacts to those reporting significant negative effects on employment.

In an effort to synthesize the contradictory findings of the "New Minimum Wage Research", several scholars have conducted rigorous meta-analyses on this body of research. One of the most recent, and largest, of these meta-analyses was conducted by Martínez and Martínez (2021), who evaluated 588 studies on minimum wage effects from 1900-2020. These authors first highlight that most prior meta-analyses were conducted on evidence from the United States, while very few have covered European countries, with even less analysing developing nations (Martínez & Martínez, 2021). Overall, Martínez and Martínez (2021) found that these previous meta-analyses predominantly found either no or minimal negative effects on employment. In addition, they highlight that many of these meta-analyses displayed evidence of publication bias, in favour of studies that showcased negative employment impacts (Martínez & Martínez, 2021). Further, these meta-analyses indicate that the negative employment effects of minimum wages tended to be concentrated amongst young people and low-skilled workers (Martínez & Martínez, 2021).

In their own meta-analysis, Martínez and Martínez (2021) emphasize that less than 13% of all the studies included in their paper were conducted in developing countries. Nevertheless, they note that minimum wages tend to, on average, produce small negative effects on employment (Martínez & Martínez, 2021). Their analysis also revealed evidence of publication bias for research conducted in developed countries – favouring those which reported negative employment effects as a result of minimum wage laws (Martínez & Martínez, 2021). Whereas for

developing countries, the indication of publication bias was indeterminate (Martínez & Martínez, 2021).

While there has been a notable increase in the number of studies evaluating the effects of minimum wages in developing countries in recent years; however, as indicated, these analyses remain relatively scarce. This is particularly true for African nations, with published work on this topic existing for only a handful of countries (Bhorat, Kanbur & Stanwix, 2015). Broecke, Forti and Vandeweyer (2017), who conduct a meta-analysis on the effects of minimum wages in emerging economies, stress that while the impact of minimum wages on employment has been extensively studied in developed countries, there are several reasons why the effects of minimum wages may differ in developing nations. For example, they draw attention to the fact that minimum wage legislation may have little to no impact on employment because developing countries are typically characterised by high rates of informality and poor levels of compliance. Conversely, in developing economies, minimum wages are frequently established at comparatively high levels relative to the average wage (Broecke, Forti & Vandeweyer, 2017). Moreover, unskilled workers who earn at or close to the minimum wage typically make up the bulk of the workforce (Broecke, Forti & Vandeweyer, 2017). This suggests that the potential negative employment effects may even be more pronounced compared to developed countries.

Nevertheless, despite the apparent labour market differences between advanced and emerging economies, Broecke, Forti and Vandeweyer (2017) found that the impact of minimum wages on employment to be quite similar: overall, minimum wages seem to have either a small negative effect or no impact on employment in developing nations. However, the authors highlight that particularly vulnerable groups, such as youth and low-skilled workers, are marginally more adversely affected in terms of employment. Broecke, Forti and Vandeweyer (2017) stress that while the effects of minimum wages on employment across developed and developing nations appears to be quite similar, the factors driving these effects are likely to be different. They suggest that for developed countries, the minimal employment effects may be explained by factors such as the firms' capacity to adjust other working conditions (such as hours worked) or monopsony power of employers. By contrast, as noted above, the marginal employment impacts in developing nations are likely a reflection of low compliance and high levels of informality (Broecke, Forti & Vandeweyer, 2017).

It is important to highlight that South Africa was the only African country assessed in Broecke, Forti and Vandeweyer's (2017) paper. This clearly highlights that minimum wage research is very limited for African countries and thus underscores the need for further investigations into the impact of minimum wages for low wage workers in emerging African economies.

2.2 South African Minimum Wage Literature

Prior to the implementation of the National Minimum Wage (NMW) in 2019, the Basic Conditions of Employment Act (BCEA), enacted in 1997 and later amended in 2002, provided the legislative framework for the implementation of minimum wages across specific sectors of the South African economy (Bhorat, Kanbur & Mayet, 2012; Van der Zee, 2017). Specifically, the BCEA allowed for the creation of the Employment Conditions Commission (ECC) in 1999,

which is a statutory body consisting of representatives from trade unions, employer organisations and independent experts, whose primary role is to advise the Minister of Employment and Labour on issues related to minimum wages and other conditions of employment (Bhorat, Kanbur & Mayet, 2012). Importantly, the ECC played a critical role in the determination of sector-specific minimum wages and other employment conditions – otherwise known as sectoral determinations. While the main focus of sectoral determinations was the setting of minimum wages, as noted, they also address other employment conditions such as working hours, leave provisions, notice periods, termination procedures, as well as ensuring employees are provided with a written employment contract (Bhorat, Kanbur & Mayet, 2012; Isaacs, 2016). Essentially, the aim of sectoral determinations was to provide comprehensive protection and fair labour practices for workers in specific sectors.

Sectoral determinations targeted sectors where workers were considered "vulnerable", as well as those not represented by trade unions or covered by bargaining councils (Bhorat, Kanbur & Mayet, 2012). Between the inception of the ECC and the introduction of the NMW, sectoral determinations were established for eleven sectors of the economy, ten of which had minimum wage determinations – namely, forestry, private security, domestic work, contract cleaning, hospitality, agriculture, taxi, civil engineering, learnerships and wholesale and retail (Bhorat, Kanbur & Mayet, 2012; Isaacs, 2016). The sectoral determinations set minimum wages either for the industry as a whole or by job category within the industry. The first national sectoral minimum wage was introduced in 1999 for the contract cleaning sector (Bhorat, Kanbur & Mayet, 2013). Over the following decade, this system was gradually expanded to the remaining nine sectors listed above. In fact, by 2007, workers covered by sectoral determinations accounted for more than 40% of South Africa's low-paid workers (Bhorat, Lilenstein & Stanwix, 2021).

Several studies have evaluated the impacts of the sectoral minimum wages on the employment, wages, hours worked and fringe benefits of their intended beneficiaries. There are two studies investigating the effect of sectoral minimum wages on domestic workers (Hertz, 2005; Dinkelman & Rancchod, 2012), while six studies have analysed either the impact of the introduction of sectoral minimum wages on the agricultural sector (2003) and/or the 52% increase in the agricultural minimum wage in 2013 (Bhorat et al., 2014; Garbers et al., 2015; Van der Zee, 2017; Ranchhod & Bassier, 2017; Piek & von Fintel, 2020). Bhorat et al. (2013) evaluated the effect of sectoral minimum wages across five sectors: namely, domestic work, forestry, private security, wholesale and retail and taxi. In a later paper, Bhorat et al. (2016) examined the effects that sectoral minimum wages had on youth working in the five sectors evaluated in Bhorat et al. (2013), as well as on agricultural workers.

Overall, for five out of the six sectors evaluated by the above body of literature, the impacts of sectoral minimum wages have been positive. These sectoral minimum wages have led to higher wages[6] on average for covered workers, with no significant employment losses, as well as no

[6] Bhorat et al. (2015) found that 1 unit increase in the wage gap (minimum wage – median wage of a given district council) leads to 2%, 6%, 7% and 23% increase in the real hourly wages of taxi, domestic, retail and security workers respectively following the introduction of sectoral minimum wage laws. No significant effect was found for forestry workers.

major adjustments in hours worked that could offset the rise in hourly pay[7]. These results align with much of the international evidence, which (as noted above) typically find marginal to no negative effects on employment.

In contrast, most of those who have assessed the implementation of minimum wages to the agricultural sector in 2003 (as well as the subsequent 52% increase of these minimum wages in 2013) found that the legislation led to significant employment losses among covered agricultural workers (Bhorat et al. 2014; van der Zee 2017; Piek & von Fintel 2020). Bhorat et al. (2014) observe that the negative employment effects were largely among part-time workers[8]. While Piek & von Fintel (2020) highlight that in 2013, job losses occurred at higher rates among smaller farming operations compared to larger ones. Further, the authors stress that the negative impact observed on the employment of agricultural workers is primarily a result of a decline in the creation of agricultural jobs over the medium-term rather than abrupt job losses brought on by minimum wage hikes (Piek & von Fintel 2020). Unlike the above papers, Ranchhod and Bassier (2017) find no evidence of employment losses among agricultural workers following the 52% increase in the sector's minimum wage. Nevertheless, all the above studies[9] found that either the implementation of the minimum wage in 2003[10] or the subsequent 52% increase of these minimum wages in 2013[11] resulted in significant wage increases for agricultural workers.

It is also worth noting that much of the work performed by agricultural labourers is highly substitutable with technology, which likely makes these workers particularly vulnerable (in terms of their employment) when minimum wages are either introduced or increased (Bhorat et al., 2016). Contrarily, at this point in time, this is less of a concern for many workers in the services sectors (such as retail, taxi and domestic work) – as most occupations (or rather the tasks performed by most occupations) in these sectors are not yet substitutable to technology (Bhorat et al., 2016).

Bhorat et al. (2016) found that impact of minimum wages (in terms of wages, employment, hours worked and written contract coverage) is fairly similar between youths and adults. However, the incidence of minimum wage violation appears to be comparably higher for youth (between 43% to 51% all covered youth earned below the minimum wage) relative to adults (between 38% to 41% all covered adults earned below the minimum wage) (Bhorat et al., 2016).

The National Minimum Wage (NMW) Bill for South Africa became effective on the 1st of January 2019 (Republic of South Africa, 2018). The national wage floor was set at R20/hour for

[7] Bhorat et al. (2013) found that the hours worked of retail and security workers decreased by 1.2 and 1.7 hours respectively following the implementation of sectoral minimum wages. The authors also found that taxi workers in district councils with a larger wage gap (minimum wage – median wage of a district council) experienced a greater decline in their working hours as a result of the implementation of minimum wages.

[8] Bhorat et al. (2014) also found that the hours worked by farmworkers increased by 5.5 hours following the introduction of the 2003 sectoral minimum wage – which they ascribe to the decline in part-time farmworkers.

[9] Except Piek & von Fintel (2020), who did not assess the impact on wages.

[10] Bhorat et al. (2014) found that the implementation of minimum wages in 2003 led to a 22.4% increase in the real hourly wages for farmworkers relative to the control group. Additionally, they found that a 1 unit increase in the wage gap results in a 12.1% increase in wages for farmworkers subsequent to the implementation of minimum wages – put differently, farmworkers in district councils with larger wage gaps experience greater improvements in their earnings due to minimum wages.

[11] Van der Zee (2018) found that the 52% increase in the agricultural sector minimum wage led to a 17.9% improvement in farmworkers' wages compared to the control group (immediately following this minimum wage increase). Further, she observes that a 1 unit increase in the wage gap results in a 19.8% increase in wages for farmworkers following the 52% increase in minimum wages. Ranchhod and Bassier (2017) found that three (nine) months after the 52% minimum wage increase, farmworkers experience a 10.8pp (20.77pp) improvement in their wages.

all workers, excluding those employed as domestic workers (R15/hour), farmworkers (18/hour), as well as employees of the expanded public works programmes (R11/hour) (Republic of South Africa, 2018). These three groups of workers were allocated lower wage floors as their pre-existing sectoral minimum wages were regarded as falling to far below the national minimum – and thus posed a greater risk for the potential negative consequences of minimum wages (such as employment losses and reduction in hours worked). However, as noted by Bhorat et al. (2021), many more workers outside of these groups required considerable pay rises to meet the NMW. Nevertheless, as of 2022, both farmworkers and domestic workers are entitled to the same minimum wage floor as the NMW.

There has only been one study to date that has evaluated the impact of the NMW. Bhorat et al. (2021) employed the Quarterly Labor Force Survery (QLFS) to investigate the quantitative impacts of the NMW in South Africa. As mentioned, the authors highlight that a significant pay increase was mandated by the NMW for a large number of workers. In fact, they estimated that nearly half of all employees (around 46% or 5.2 million workers) were earning below the NMW before 2019. While they anticipated that the NMW would have substantial labour market impacts given the extent to which wages were expected to rise, as well as how many workers this legislation was meant to impact, the effects of the NMW (in the short-term) were rather modest. Bhorat et al. (2021) find that for most workers, hourly wages did not improve substantially. They highlight that non-compliance rates stood at 43.5% at the end of 2019 – which is fairly similar to the levels of non-compliance observed with the sectoral minimum wages (Bhorat et al., 2016). Bhorat et al. (2021) also find a small decline in weekly hours worked for minimum wage beneficiaries and there was no evidence of significant employment losses (Bhorat et al., 2021).

2.3 Minimum Wages and the Gender Wage Gap

According to conventional economic theory, the *law of one price* serves as the foundational principle for understanding wage determination in perfectly competitive labour markets. This law postulates that in a perfectly competitive labour market, workers with comparable skills, work experience and employed in the same (or similar) occupations should receive the same wage (Prado et al., 2020). However, the presence of numerous 'wage gaps' identified in empirical economic research clearly suggests that most, if not all, labour markets are distorted from a state of 'perfect competition' (Rubery & Grimshaw, 2009). As argued by Rubery and Grimshaw (2009), although most labour economists do not anticipate for the *law of one price* to apply in reality, it serves as a critical starting point for empirical wage analyses. Specifically, the law of one price allows scholars to identify the extent to which actual labour markets deviate from the state of perfect competition, as well as what variables characterise these labour market distortions (such as gender or race).

Several studies have revealed that the wages earned in countries with labour markets governed by more "centralised and coordinated wage-setting institutions" tend to reflect more closely those predicted by the *law of one price* (Rubery & Grimshaw, 2009:2). Particularly, there is an increasing recognition that minimum wages may hold the potential to partially counter the income inequities produced by distorted labour markets (Rubery & Grimshaw, 2009).

A widely acknowledged income inequity is the wage gap between men and women – a phenomenon that is observed among labour markets across the globe. Women endure a multitude of unique obstacles both within and outside the labour market, which serve to disadvantage them compared to men (in terms of pay). These obstacles underscore why women continue to earn lower wages relative to men despite increasing comparability in human capital accumulation. While minimum wages cannot directly change factors such as women's generally higher share of caregiving and household responsibilities (relative to men), the type of occupations women tend to pursue or their propensity to negotiate for higher wages – all of which act to lower women's wages compared to men – they can mitigate the impact that these factors have on depressing women's wages (Benjamin, 2015). In contrast, minimum wages can directly shift unjust wage structures influenced by factors such as the undervaluation of work typically performed by women or discrimination by employers (in terms of employers paying men more than women for doing the same or similar work) by ensuring that no worker's wages, man or woman, can fall below a certain threshold.

The above clearly highlights that the gender pay gap is explained by a multitude of factors both within and outside the labour market. While there may be several options available to tackling gender wage discrepancies, minimum wages could serve as particularly powerful tool given its' ability to potentially either mitigate the impact of certain factors on depressing women's wages or through directly adjusting wage structures. The succeeding paragraphs provide further insight on the various factors driving gender wage gaps and illustrate more clearly how minimum wages may partially lessen the impact these factors have on diminishing women's pay relative to men's – and thus their potential to reduce gender pay discrepancies.

First, several studies have found that women tend to have lower reservation wages on average compared to men (Brown, Roberts & Taylor, 2011; Caliendo, Lee & Mahlstedt, 2017; Matysiak & Cukrowska-Torzewska, 2021). Rubery and Grimshaw (2009) suggest that this may be explained by the fact that women are less likely be recipients of unemployment benefits or by the societal expectation that women are "secondary earners" within a household.

Unemployment benefits may serve as an alternative way of creating a 'wage floor' – since, in theory, it requires wages to be established at a higher rate to incentivise individuals to work (Gregg & Wadsworth, 2000). However, these benefits are typically not provided to those in "non-standard" jobs or with short and sporadic work histories (Rubery & Grimshaw, 2009). Since women are more likely to have interrupted careers (due to, for example, child rearing) and work in low-paid, informal and/or part-time work, they are subsequently less likely to be eligible for unemployment benefits (Gregg & Wadsworth, 2000; Rubery & Grimshaw, 2009). As such, lack of access to unemployment benefits may force women to accept jobs with lower wages than they otherwise would (i.e., if they had access to unemployment benefits).

The expectation or assumption that women are "secondary earners" continues to prevail and persist worldwide (Utomo, 2012). This belief suggests that women only provide a marginal contribution to the household income, and thus their earnings are not as critical or necessary as their male counterparts (even if they have similar levels of education and work experience). Rubery and Grimshaw (2009) argue that this may lead to women undervaluing their own skills

and labour, and therefore accepting lower wages than they would if they were not subject to this expectation.

Another reason why minimum wages may be especially significant for women is their relatively greater vulnerability to monopsony power (Rubery & Grimshaw, 2009). A monopsony has significant power and control over the wages offered to its' employees, given the absence of other employers and thus alternative job opportunities. As such, a monopsony has the capacity to offer wages below their 'competitive levels'. While both men and women may be disadvantaged by monopsony power, as noted, women tend to be particularly vulnerable (in terms of accepting lower wages). This largely stems from the fact that relative to men, women have less access to alternative income sources (such as unemployment benefits) and less alternative employment opportunities – women tend to have comparatively lower job mobility[12] and require more specific working arrangements due to being expected to take on the bulk of household and caregiving responsibilities (Rubery & Grimshaw, 2009; Benjamin, 2015).

Benjamin (2015) asserts that women's work, or rather the occupations or tasks predominantly performed by women, are undervalued by both the labour market and society at large. This, in turn, lowers the wages associated with these occupations and tasks relative to those that require similar skill levels but are deemed as "male professions". As such, the undervaluation of "women's work" makes women more likely to endure lower pay relative to men. This phenomenon underscores the need for a legislated wage floor which can limit the extent to which women's work is undervalued. Similar to this is the fact that significant occupational segregation persists between men and women across most societies, and that women tend to predominate in low-paid occupations (Hegewisch & Hartmann, 2014). This dominance in low-paid occupations may be explained by social norms which influence the type of professions selected by women (Hegewisch & Hartmann, 2014; Rubery, 2017). However, as noted, the low pay ascribed to these occupations may be partially a function of them being labelled as "women's work" and thus being undervalued by society (Rubery, 2017). In addition, since women tend to take on a greater share of caregiving and household responsibilities relative to men, they may be more likely to seek out occupations which allow for greater flexibility, part-time work and are less demanding in nature – all of which are associated with lower wages (Rubery, 2017). Thus, minimum wages could potentially improve the comparability in wages between occupations with similar workers; however, differ in terms of their concentration of male and female employees (Hegewisch & Hartmann, 2014; Benjamin, 2015).

Many studies have highlighted that men and women differ in their willingness or propensity to negotiate wages with their employers (Babcock & Laschever 2003; Croson & Gneezy, 2009; Bowles, 2014). These studies observe that women are less likely to negotiate for higher wages – which, Bowles (2014) argues is most likely explained by the fact that the "social cost"[13] of bargaining for higher wages is significantly greater for women relative to men, rather than differences in confidence or bargaining skills. In fact, she notes that in most published research,

[12] Rubery and Grimshaw (2009) highlight that the typical role of women in a family as a primary caregiver means that they are limited to jobs in certain geographical areas and working hours.
[13] Bowles (2014) defines the "social cost" of wage negotiation as employers being less inclined to work with a given employee after seeing them negotiate their pay.

the social cost of engaging in wage negotiation is significant for women but not for men (Bowles, 2014). Further, women in low-paid and low-skilled jobs tend to have limited alternative employment opportunities and means of income generation, and thus may be particularly weary of negotiating for higher pay (Benjamin, 2015). Similarly, those in 'non-standard' jobs (such as temporary or part-time work), whereby women are often overrepresented, tend to not be unionised or covered by bargaining councils – which may place them at greater risk of exploitation (in terms of wages offered) by their employers. Thus, differences in the propensity to negotiate wages between men and women, as well as unionisation and bargaining coverage, underscores the importance of enacting sufficient minimum wages – which protect women from potential exploitation.

The above factors clearly demonstrate why minimum wages may serve as a particularly powerful instrument for reducing women's relatively greater susceptibility to receiving low wages. Further, minimum wages may play a critical role in minimizing the pay gaps between men and women, particularly at the lower end of the earnings distribution. In addition, as noted above, women tend to predominate in low-wage occupations and thus are more likely to be beneficiaries of minimum wages. Put differently, women stand to disproportionately benefit from the enactment of minimum wages given that they are more likely to be found in low-paying jobs and within these low-paying occupations, they are more likely to earn lower wages than men.

While minimum wages may improve the earnings of women in low-wage occupations (and reduce gender gaps between low earning men and women), there may be differences in the impact that minimum wages have on the employment, hours worked and compliance rates of men and women. Although the literature discussed above, on average, appears to find little to no negative effects on employment and hours worked, theses analyses were conducted on samples that include both men and women and do not disaggregate their results by gender. As such, from the studies mentioned above, we cannot conclude whether, for example, women tend to experience significant employment losses while men do not, or if women are more likely to have their working hours reduced.

Thus, analyses which provide this gender disaggregation allow us to discern whether minimum wages do in fact improve the overall state of low-earning women, or whether they, on average disadvantage these women even further through employment losses or reduction in working hours or fringe benefits. Or alternatively, employers are less likely to be compliant with minimum wages for female workers (or women are more likely to work in industries or sectors where non-compliance rates are higher), and thus minimum wages have a more muted effect on women compared to men. As such, if non-compliance is a pervasive issue among women in particular, minimum wages may actually worsen gender pay gaps among low-wage earners. In addition, if among low-wage earners, women's wages tend to fall further below the mandated minima, greater wage increases will be required for women on average. This could potentially place them at greater risk of the possible adverse consequences of minimum wages. Therefore, for minimum wages to be 'equality-enhancing', minimum wage compliance needs to be strictly monitored and enforced. Further, support and protection in some shape or form should be provided to women who may be at high risk of having their working hours or employment benefits reduced to compensate for wage increases, or even losing their jobs.

As such, the degree to which minimum wages can serve as an "equality-enhancing" tool will likely depend on a country's ability to enforce minimum wages, the extent of "distortions"[14] within a given labour market (if minimum wages are set at a national level) or sector (if minimum wages are set at the sector level), as well as whether there are institutions in place that provide protection and support to those most at risk of the potential negative effects of minimum wages.

2.4 Empirical Literature on Minimum Wages and the Gender Wage Gap

The capacity of minimum wages to boost the income of those at the lower end of the earnings distribution, and subsequently induce greater wage compression (i.e., reduce wage inequality between lower and higher earning individuals), has encouraged a few scholars to explore whether minimum wages play a role in reducing gender wage inequality, as well as if they have differential effects on employment and compliance for men compared to women.

In their landmark study, DiNardo et al. (1995) found that minimum wages can decrease wage inequities between men and women. Since the seminal assessment of DiNardo et al. (1995), a few papers have attempted to explore the relationship between minimum wages and the gender earnings gap – most of which have been conducted for developed countries. The majority of these papers find that the introduction of minimum wages reduces the gender pay gap, particularly at the lower end of the earnings distribution. As mentioned, this is due to the fact the effects of minimum wages are likely to be the greatest among those for whom the law is most binding. Thus, since women typically predominate in low-paid work (and they tend to have the lowest wages in low-paid jobs), they should form the bulk of those benefiting from a minimum wage legislation.

Dex et al. (2000) examined whether gender wage gaps were affected by the introduction of a national minimum wage in the United Kingdom (UK) in 1999. They found that following the implementation of the minimum wage, the female/male wage ratio at the lower end of the earnings distribution improves from 0.70 to 0.72. Robinson (2005) studied whether the gender pay gap across regions in the UK changed due to the introduction of the national minimum wage.[15] She found that the minimum wage had no significant effect on the gender pay gap in regions where women make up a relatively high share of low-paid workers and/or where the distance between the national minimum wage and the average hourly wage rate in the pre-law period (1998) is larger (Robinson, 2005).

Bargain et al. (2015) examined the impacts of the introduction of the national minimum wage on the gender wage gap[16] in the UK (in 1999) and Ireland (in 2000). They find a large reduction in the gender pay gap among low-wage workers in Ireland, with small spill-over effects higher up in

[14] Such as gender differences in the propensity to negotiate, vulnerability to monopsony power, reservation wages and discrimination.
[15] She assigned London as the control group due to its more balanced distribution of men and women in low-paid jobs. In addition, the gender pay gap and the extent to which the average wages of all workers fell below the minimum wage was the smallest relative to all other regions in the year before the minimum wage was introduced. All other regions served as treatment groups.
[16] Bargain et al. (2015) define the gender wage gap as the difference between the average hourly earnings of men and women as a percentage of men's average hourly earnings. Boll et al. (2017), Caliendo and Wittbrodt (2021), Majchrowska and Strawiński (2018) and Hallward-Driemeier et al. (2017) also define the gender wage gap according to this convention.

the earnings distribution. Bargain et al. (2015) observe that the mean gender pay gap and the gender pay gap of those in the bottom 10% of the wage distribution reduces from 21% to 13% and 28% to 14% respectively. In the UK, the authors find minimal impacts, which they ascribe to non-compliance with the minimum wage laws.

Boll et al. (2015) simulate the likely impacts of Germany's national minimum wage (enacted in 2015) on men's and women's earnings. Their findings reveal that the minimum wage reduced the unadjusted gender wage gap by 2.5 percentage points (pp) – from 19.6% to 17.1% (Boll et al., 2015). Caliendo and Wittbrodt (2021) found that the national minimum wage in Germany led to a significant negative impact on regional unadjusted gender pay gaps. Between 2014 and 2018, the gender pay gap among those at the 10th percentile of the earnings distribution reduced by 4.2pp (from 14.4%) in regions that were strongly impacted by the minimum wage compared to regions that were less affected (Caliendo & Wittbrodt, 2021). The gender wage gap at the 25th percentile and at the mean reduced by 3.3pp (from 18.3%) and 2.3pp (from 20.4%) respectively in regions where the minimum wage was more binding relative to those where it was less binding (Caliendo & Wittbrodt, 2021). Majchrowska and Strawiński (2018) found that a minimum wage increase led to a 2.1 pp decrease in the mean gender wage gap (from 19.6% to 17.5%) between 2006-2010 in Poland. They found that the gender pay gap reduced most significantly among young workers in Poland, while no significant effect was detected for middle-aged workers (Majchrowska and Strawiński, 2018).

Broadway and Wilkins (2017) assessed the impacts of Australia's minimum wage system on the gender wage gap. Importantly, while Australia has a national minimum wage, most jobs have legally binding minimums specified in industrial "awards" – this is referred to as the award wage system and covers far more employees than the national minimum wage. Broadway and Wilkins (2017) note that Australia's award system has resulted in the establishment of numerous minimum wage schedules – which are determined according to industry and/or occupation, the specific tasks and duties workers perform, as well as workers' age, skill level and experience. The authors find that while the female/male wage ratio is significantly smaller among award wage recipients compared to those not covered by award wages (0.90 versus 0.81), there appears to be a penalty associated with working in a "female-dominated" occupation. They find that among beneficiaries of the award wage system, working in a female-dominated industry is associated with a 17.4% reduction in real hourly wages. Broadway and Wilkins (2017) suggest that this penalty may be a result of award-wage decisions being affected by the "typical" wages in industries and occupations, as well as the fact that male-dominated professions have profited from a long history of strong trade union membership – which has resulted in higher average salaries for men. Thus, they argue that the gender wage gap among award wage recipients would be reduced even further if they were not determined according to factors such as occupation and specific tasks or duties performed (Broadway and Wilkins, 2017).

To date, only a handful studies assessing the relationship between minimum wages and the gender wage gap have been conducted in developing economies. Li and Ma (2015) examined whether China's national minimum wage (introduced in 1993) impacted gender pay gaps. They found that the minimum wage reduced the gender pay gap (female/male wage ratio) by 9.2%

among those in the treatment group[17] relative to the control group[18] between 1992 and 2007 (Li & Ma, 2015). Hallward-Driemeier et al. (2017) found that minimum wage hikes in Indonesia narrowed gender pay gaps among production workers. They observe that a 1pp increase in minimum wages is associated with a 0.14pp reduction in the average gender wage gap between 1993 and 2006. Hallward-Driemeier et al. (2017) find that those in the bottom 10% of the wage distribution benefit the most – a 1pp increase in the minimum wage is associated with a 0.55pp decrease in the gender pay gap for these workers. Belser and Rani (2011) simulated the likely impacts of a national minimum wage on wage inequality in India. These authors found if all Indian workers received at least the minimum wage, the average earnings of women relative to men would rise from 84% to 90% for formal workers and from 74% to 92% for casual workers (Belser and Rani, 2011). Belser and Rani (2011) note that these impacts do not occur due to women being over-represented among those earning below the minimum wage, but rather because among sub-minimum wage workers, women are paid less on aggregate relative to men.

In summary, most of the above research finds that either an introduction of or an increase in the minimum wage leads to a reduction in the gender pay gap, particularly in the lower half of the earnings distribution (i.e., those for whom the minimum wage is binding).

While most of the above studies found significant reductions in pay gaps between men and women following the introduction of minimum wages, it is important to highlight that (as discussed above) minimum wages may also have potentially adverse impacts on other labour market outcomes, such as employment, hours worked and fringe benefits (and that these negative effects may be greater for women). Since women are more likely to be on the lower end of the earnings distribution and their wages tend to fall further below mandated minima, they are expected to bear the brunt of the potential negative outcomes of minimum wages (Khan, 2015).

Dreepaul-Dabee and Tandrayen-Ragoobur (2021) found that the introduction of minimum wages resulted in greater employment losses among women compared to men in Mauritius. The probability of males retaining employment reduced by 0.425 compared to the control group, while the probability of females staying employed declined by 0.547 following the implementation of minimum wages. They suggest that this may be explained by the over-representation of women in low-paid occupations (Dreepaul-Dabee & Tandrayen-Ragoobur, 2021). Boll et al.'s (2015) simulations suggest that the introduction of minimum wages would come at the expense of job losses in Germany, whereby women are more affected than men. They estimate that if we assume a 'neoclassical labour market'[19], job losses of women covered by the minimum wage range between 3.2% (low elasticity of labour demand) and 18.4% (high elasticity of labour demand), while the job losses of their male counterparts range between 1.7%

[17] The treatment group represents those from districts with relatively large gender wage gaps in the years prior to the introduction of the minimum wage and a relatively high Kaitz index (minimum wage divided by the median wage) in the years following the implementation of the minimum wage.
[18] The control group represents those from districts with relatively small gender wage gaps in the years before the introduction of the minimum wage and with a Kaitz index smaller than the treatment group in the years following the implementation of the minimum wage.
[19] In a Neoclassical labour market, there are many 'buyers' (employers) and 'sellers; (workers). Wages are determined by the equilibrium of supply and demand for labour. This model assumes perfect competition and flexibility in the labour market. If there is a surplus of labour, wages may decrease and vice versa if there is a labour shortage. According to neoclassical theory, if the minimum wage is set above the equilibrium wage, it could lead to unemployment because employers are unwilling or unable to hire as many workers at this higher wage.

and 5.9%, respectively. When they assume a 'monopsonistic labour market'[20], job losses of women (men) range between 1.2 % and 6.6 % (0.7 % and 2.6 %). In contrast, Hallward-Driemeier et al. (2017) found that the impact of minimum wages on men's and women's relative employment prospects appears to be rather limited, and reductions in the gender pay gap do not seem to have come at the expense of large losses in women's labour market opportunities.

Menon and Rodgers (2017) highlight another potential caveat of relying on minimum wages to reduce gender pay gaps – namely, gender differences in minimum wage violation. These authors found that minimum wages led to an increase in the residual gender wage gap[21] in India and believe that this may be explained by the weak compliance among firms that predominantly hire female workers. As such, the authors assert that women appear to be at greater risk of non-compliance relative to men in developing economies. Thus, Menon and Rodgers (2017) argue that for minimum wages to reduce gender gaps in the labour market, governments should devote more attention the enforcement and compliance of minimum wages.

2.5 The Case of South Africa: The Potential Role of Minimum Wages in Reducing Gender Wage Gaps

This section attempts to demonstrate why the minimum wage may be more binding for South African female workers around the period when many of the sectoral minimum wages were introduced (1999-2007), as well as why female workers are still likely to benefit more from the current national minimum wage system (2019-present) relative to men.

The paper "Women and the Economy: How Far Have We Come?" by Casale and Posel (2005) provides a comprehensive overview of men's and women's labour market characteristics between 1995 and 2003 – and thus offers useful descriptive indicators for whether female workers would likely reap greater gains (in terms of improvements in earnings) from South Africa's sectoral minimum wages. First, the authors find that in 1995 and 2003, around 23% of all female employees worked as domestic workers or in unskilled agriculture (Casale & Posel, 2005). In contrast, 12% (1995) and 6% (2003) of all male employees worked in these "employment types" (Casale & Posel, 2005). Casale and Posel (2005) show that the aggregate income earned by workers in these "employment types" in 2003 was considerably lower than the income earned in all other "employment types"[22]. For example, the mean earnings for both men and women in unskilled agriculture in 2003 was R666 per month compared R3600 per month for those classified as "employees" (Casale & Posel, 2005). In addition, they find that even within "employment types" women typically earn less than men on average: unskilled female agricultural workers earned R616 per month, while their male counterparts earned R717 per

[20] In a Monopsonistic labour market, there is a 'single buyer' (employer) with significant market power. The employer has control over wages due to a limited number of alternative job options for workers. Wages are set by the employer, who considers the trade-off between hiring more workers and paying higher wages. Both the resulting wage and employment level are below their equilibrium level. When a minimum wage is introduced, it may lead to positive employment effects because if the level of the minimum wage lies in between the wage enforced by the monopsonist and the equilibrium wage of the neoclassical model.

[21] The residual gender wage gap reflects the portion of the wage gap between men and women that is typically attributed to discrimination. The authors find that a 10% increase in the minimum wage leads to a 1.28% increase in the residual gender wage gap. However, this result was only significant at the 10% level.

[22] All workers were distributed across five employment types: formal self-employed, employees, informal self-employed, unskilled agriculture and domestic workers. The highest earning group (by quite a significant margin) was the formal self-employed, followed by employees. The other three groups earned fairly similar wages (which were much lower than the wages earned by the other two employment types), with domestic workers earning the lowest, followed by unskilled agriculture and then informal self-employed.

month (Casale & Posel, 2005). The authors also highlight the earning disparities between men and women in similar occupations and with comparable qualifications: for example, they find that men employed in service, shop or market sales' occupations earned 50% more than equally qualified women working in these occupations (Casale & Posel, 2005).

Among all employed men and women in 2003, Casale and Posel (2005) note that women are significantly more likely to be classified as part of 'the working poor' – which are all those who receive an income of less than 2 USD per day (R420 a month in 2003 prices). They find that 1.1 million of the 1.7 million reported 'working poor' were women in 2003. While a share of these women may be informally self-employed and thus their earnings would not be impacted by minimum wage laws, the majority are likely employees in unskilled agriculture, domestic workers, or employees in other low-wage occupations – many of which would be classified as minimum wage beneficiaries.

To complement the findings of Casale and Posel (2005), a report by the South African Government (2015) looked at the incidence of low-paid work (earning less than 2 USD per day) between 2001 and 2007. Between 43.5% (2001) to 36.4% (2007) of all women were in low-paid work, compared to 33.4% (2001) to 29.4% (2007) of men the (South African Government, 2015). Although women were still more likely to be in low-paid work in 2007, the decline observed between 2001 and 2007 may be partially explained by the introduction of sectoral minimum wages during this period.

Another interesting finding worth noting from the report by the South African Government (2015) is that between 2001 and 2005, the gender wage gap (the female/male wage ratio) is greatest amongst those with no education (0.56 in 2001 and 2005) and with a primary education or less (0.61 in 2001 and 0.63 in 2005). In other words, women with no education (with a primary education or less) earn 56c (61-63c) for every R1 earned by men with no education (with a primary education or less). For those with a matric or higher, the gender wage gap sits above 0.7 (South African Government, 2015). These findings suggest that in the period during the introduction of many of the sectoral minimum wages, gender pay discrepancies were the greatest among low-educated workers – and thus most likely predominantly low-skilled and low-paid workers. This underscores just how poorly renumerated 'low wage' female workers were and the critical need for policies such as minimum wages.

As such, the above clearly illustrates that around the period where the first sectoral minimum wages were being introduced, women were more likely to be found in the lowest paying "employment types". Further, within "employment types" and occupations women typically earned less than their male counterparts. These descriptive statistics suggest that the share of female employees relative to the share of male employees who would benefit from the sectoral minimum wages may be greater, as well as female minimum wage beneficiaries would likely experience greater increases in their wages compared to male beneficiaries. Importantly, this assumes perfect compliance with minimum wage laws – in other words, all those covered by minimum wages receive at least the minimum wage.

A more recent paper by Feder and Yu (2020) uses data from the National Income Dynamics Study (NIDS) to examine the characteristics of those engaged in low-wage employment – which they define as earning at or below two thirds of the median hourly wage in the base year (2016). Their period of analysis spans from 2008 to 2015. The authors find that in 2008 and 2015 women make up 55% and 54% of the low wage employed respectively. Feder and Yu (2020) use bivariate probit regressions on the likelihood of low-wage employment and find that in 2008 and 2015 women are 57% and 40% more likely to be in low-wage employment than men. While it is promising that the likelihood of women being in low-wage employment declined between 2008 and 2015 – which could possibly be a reflection of sectoral minimum wage laws – women remain over-represented in low-wage employment. These findings underscore the continued need for minimum wage laws, as well as likely much stricter enforcement of these laws – which, as discussed in section 2.2, sits at just over 40% under the current national minimum wage (Bhorat et al., 2021).

Feder and Yu (2020) also find that in 2015, the industries with the highest concentration of low-wage employed are private households (23%), community, social and personal (CSP) services (17.64%), and wholesale and retail (17.27%) – which equates to nearly 60% of all those classified as working poor.[23] As noted in a report by the Government of South Africa (2015), in 2015 68% of all female employment was concentrated in the CSP services (31.2%), wholesale and retail (21.9%), and domestic work (14.7%). While these industries only employ 37% of all male workers (South African Government, 2015). Women occupy 78% of all jobs in private households, 61% of all jobs in CSP services and 48% of all jobs in wholesale and retail in 2015 (South African Government, 2015).

The report by the South African Government (2015) found that in 2015 36.2% of all female workers were employed in low-skilled occupations (domestic and elementary work), compared to 25% of all male workers. Further, women make up 53% of all low-skilled workers (South African Government, 2015). While men were slightly more likely to work in elementary occupations (59% for men versus 41% for women), women were substantially more likely to be domestic workers (96% for women versus 4% for men) (South African Government, 2015). As underscored by Ackermann and Velelo (2013), domestic workers stand out as one of the most marginalised groups of workers, typically enduring poor remuneration, long and irregular hours of work and limited job security. The South African Government's (2015) report also looked at the distribution of the employed across monthly wage bands by gender in 2013. They found that women dominate in the two lowest bands – 53.3% and 59% of those earning between R1-R500 and R501-R1000 are women.

There are a few other labour market differences between South African men and women which underscore why low-wage female workers may, on average, be in greater need of minimum wage protection (and thus may be more likely to benefit from minimum wages) relative to low-wage male workers.

[23] The figures for 2008 are excluded here as majority of the low-wage employed are classified as working in "other" or "unspecified" industries, and thus this limits our interpretation of which industries the low-wage employed are concentrated in.

Nackerdien and Yu (2022) examine South African men and women's average time spent doing paid and unpaid[24] work using the 2000 and 2010[25] Time Use Survey (TUS) data. They find that in 2000, men on average spent 83 minutes engaged in unpaid work, while women spent 217 minutes on average. In 2010, men and women spent 97 and 229 minutes on aggregate on unpaid work. In contrast, while men spend relatively longer on paid work than women on average, the differences observed are noticeably less than the differences in time spent on unpaid work between the two genders (in both 2000 and 2010). For example, men work on average 214 minutes on paid work and women work 130 minutes in 2010 – resulting in a difference of 84 minutes. For unpaid work in 2010, the difference in time spent between men and women is 132 minutes. These findings clearly underscore that women continue to take on a much greater share of unpaid work, which is likely to be a significant contributor to wage gaps between men and women. The reason being that in order to manage all of their unpaid work, women may be more likely to select into occupations which offer more flexible working arrangements, are less demanding and allow for part-time hours – all of which are typically associated with lower wages (Benjamin, 2015).

Relatedly, requiring these specific employment conditions may also limit the employment opportunities available to women and in turn, may force women to accept lower wages. Women's unpaid work demands may also require them to take career breaks and invest less in their careers in general – both of which may contribute to restricting their career advancement and subsequent wage growth (Benjamin, 2015). Similar to this is that if women tend to have more sporadic work histories, work in less 'traditional' jobs and work fewer hours on average, they may be less likely to be entitled to UIF[26] – and as discussed in section 2.3, this may contribute to women being more likely to accept lower wages than men (Rubery & Grimshaw, 2009).

In terms of more recent UIF trends (by gender), the South African Government (2015) report finds that between 2010 and 2015 men have a slightly greater likelihood than women of having employers that make contributions to UIF. They note that in 2010 and 2015, the percentage of women with employers making contributions to UIF are 56.7% and 61.1% respectively (South African Government, 2015). These figures stood at 61.6% (2010) and 65.8% (2015) for men (South African Government, 2015).

Another labour market feature which is likely contributing to women's lower wages on aggregate is that they are less likely to be unionised than men – although the gender gap in unionisation rates has been decreasing since the early 2000s (Kerr & Wittenberg, 2021). Kerr and Wittenberg (2021) find that in 2000 just over 25% of all female employees were unionised compared to around 35% of all male employees. Between 2000 and 2019, women's unionisation rates have roughly remained the same – hovering at just over 25% (Kerr & Wittenberg, 2021). In contrast, men's unionisation rates declined over this period to around 30% (Kerr & Wittenberg, 2021). Thus, the closing gender gap in unionisation rates is largely explained by men's overall decline in

[24] Unpaid work included caring for family members, maintaining the home, and performing community service for people outside the household.
[25] These are the only two waves currently available for the South African TUS.
[26] As noted in section 2.3, UIF is typically not acquired by those in "non-standard" jobs or with short and sporadic work histories.

belonging to trade unions. Nevertheless, women still remain less likely to be trade union members than their male counterparts.

Further, as asserted by Benjamin (2015:38), South African women in "non-standard, low-paid and low-skilled" occupations are typically unorganised and excluded from collective bargaining procedures. Thus, the percentage of women in these occupations that are unionised is likely to be much lower that the above stated aggregate figures. If women (particularly low-paid and low-skilled female workers) are less likely to be unionised this means that they are less likely to benefit from collective bargaining processes, whereby unions negotiate for better terms of employment and pay with employers on behalf of the employees (Benjamin, 2015). As such, trade unions act to enhance a woman's bargaining power in wage negotiations and in turn, protect them from unduly low pay (Benjamin, 2015). Therefore, women who do not belong to trade unions may be comparably limited in their power to negotiate for better pay and working conditions.

Similarly, while no research in South Africa has explored men's versus women's willingness or capacity to negotiate wages with their employers – as discussed in section 2.3, several international studies show that women are less likely to engage in wage negotiations and that low-skilled and low-paid women may be particularly weary of engaging in wage negotiations (Babcock & Laschever 2003; Croson & Gneezy, 2009; Bowles, 2014).

Lastly, Benjamin (2015) and Posel, Hall and Goagoses (2023) highlight that an increasing share of South African households are female-headed households – whereby women are the primary breadwinners and decision-makers. Between 1995 and 2021, the proportion of female-headed households rose from 30% to 42% (Posel, Hall & Goagoses, 2023). In addition, Posel, Hall and Goagoses (2023) find that in 2008, the average per capita income of 60.82% of female-headed households falls below the poverty line compared to 53.40% of male-headed households. In 2017, 41.32% and 34.46% of female- and male-headed households lived below the poverty line (Posel, Hall & Goagoses, 2023). Thus, while female-headed households have experienced a slightly greater decline in aggregate poverty rates relative to male-headed households (35.47% versus 32.06% decline) between 2008 and 2017, female-headed households are still more likely to be entrenched in poverty compared to male-headed households (Posel, Hall & Goagoses, 2023). Another finding worth noting is that female-headed households support more children on aggregate than male-headed households in 2017 – 1.48 versus 0.63 children (Posel, Hall & Goagoses, 2023). In addition, 64% of female-headed households have children compared to 30.57% of male-headed households (Posel, Hall & Goagoses, 2023).

The above literature clearly highlights that minimum wage laws may be more binding for South African female workers on average. Put differently, low-skilled and low-wage female workers seem to be the most disadvantaged in terms of wages earned and their capacity to negotiate for better pay, and thus will likely have the most to gain from minimum wages. Further, the above findings underscore the need for mandatory wage floors to ensure that women in low-skilled and low-wage occupations earn a decent wage to not only support themselves, but to support their families too.

Nevertheless, while minimum wages may serve as a potentially powerful solution to the unduly low pay endured my many South African female workers and the gender inequities in wages earned, there are a few factors that may act to undermine the effectiveness of minimum wages at reducing gender wage gaps – and even hold the potential to exacerbate gender discrepancies in the South African labour market.

As highlighted above, minimum wage compliance in South Africa is a major issue – in fact, just over 40 percent of workers reported that they earn wages below the NMW at the end of 2019. Similar statistics have been found for workers covered by sectoral minimum wages (Bhorat et al., 2016). However, to date, no study has assessed the compliance rates of men relative to women (for either sectoral minimum wages or the NMW). Benjamin (2015:41) asserts that "no minimum wage will be attained without women's rights – compliance can only happen if women workers feel empowered and informed and able to ensure compliance." As such, if low-wage women are at greater risk of minimum wage non-compliance and have weaker bargaining capacity relative to their male counterparts on average – minimum wages will do little to reduce gender pay gaps and may in fact worsen gender wage disparities in the South African labour market.

For sectoral minimum wages, if wage floors are determined according to occupation (such as for the retail sector) and women tend to predominate in the occupations with lower wage floors (and men are more likely to be found in the occupations with higher wage floors) – then minimum wages will unlikely decrease gender wage gaps within these sectors and may even exacerbate pay disparities between men and women – as cautioned by Broadway and Wilkins (2017).

Another potential concern is that if women's wages tend to fall further below the minimum wage, then greater pay increases would be required for women relative to men (on average) to ensure compliance. This could potentially place women at greater risk of employment losses or having their working hours or fringe benefits reduced. In addition, if women do have weaker bargaining power, along with the fact that women are less likely to be covered by trade unions – suggests that women may be at greater risk of the above potential consequences of minimum wage legislation.

As such, minimum wages may be an effective policy instrument for boosting the wages of low-paid women in particular, as well as reducing pay discrepancies between men and women (especially at the lower-end of the earnings distribution). However, to ensure these equality-enhancing impacts, minimum wage compliance must be strictly monitored and enforced. Further, additional efforts or protection may need to be extended to women if they are found to be at greater risk of the potential adverse effects of minimum wage laws.

3. Data and Methods

3.1 Data Description

The data used for this paper is a pooled dataset consisting of fourteen waves of the South African Labour Force Survey (LFS) from March 2001 to September 2007. The LFS is a nationally representative household survey that Statistics South Africa (StatsSA) carried out on a bi-annual basis (in February/March and September) between 2000 and 2007. The LFS was implemented as a rotating panel, which entails surveying the same residential units multiple times (five at most in the case of the LFS) and replacing a portion of these residential units each round. Around 30 000 dwelling units were interviewed per wave. Apart from workers' hostels and people living in private residential units within institutions (such as headmasters or teachers living in private residences on school grounds), the LFS sample covers the non-institutional South African population. All data collected in the LFS is self-reported. Monthly wages are transformed into hourly wages, and then updated for inflation using the annual Consumer Price Index (CPI), converting wages into 2000 prices. It is critical to acknowledge that wages may be misreported by LFS respondents and thus measurement error is likely to be an issue for the wage variable. Further, wage mismeasurement may also be correlated with sector. For instance, farmworkers are possibly more likely to receive in-kind payments that they may not include when reporting their earnings, leading to potential underreporting compared to workers in the retail sector. This mismeasurement could introduce bias into the wage analyses presented in this paper and may partially account for observed sectoral differences.

3.2 Methods

This paper follows the econometric strategy employed by Bhorat et al. (2016) (who were inspired by the methods used by Card and Krueger (1994)), with some additions and alterations to account for the gender-disaggregated focus of the paper. To directly isolate the impact of sectoral minimum wages on wages, weekly hours worked and having a written contract[27], two difference-in-difference (DID) specifications are used (while only one of these specifications is used for employment). Further, for each DID specification, both a double DID, and a triple DID model are employed.

For specification 1, the sample includes those in the "treatment" group (those covered by the minimum wage) and a "comparison" group (those not covered by the minimum wage). As will be discussed in more detail below, workers in the treatment group and comparison group are very similar on average (in terms of education level, race, income level and more), except for whether they are covered my minimum wages or not. As such, comparing how the wages, hours worked and having a written contract, change between the pre-law and post-law period for these two groups enables us to isolate (as best as possible) the effect of sectoral minimum wages on these outcome variables.

[27] The dependent variables are defined as follows: (1) wages: the log of real hourly wages (in 2000 prices); (2) hours worked: hours worked per week; and (3) the probability of having a written contract or not.

As noted, specification 1 is employed as a double DID model (referred to as specification 1(a) hereafter), which is applied to a female only sample and then a male only sample; and as a triple DID model (referred to as specification 1(b) hereafter), which includes a dummy variable for female (which equals 1 for a female and 0 for a male) and is applied to the full sample (both men and women).

The reasons for utilising both approaches are as follows: specification 1(a) is simpler and allows for a more straightforward comparison of the treatment effects between men and women. However, while it provides some insights into potential gender differences in the average treatment effects, it cannot explicitly model the heterogeneity of treatment effects between men and women.

In contrast, specification 1(b) is better suited for explicitly estimating and comparing gender-specific treatment effects within a single model. Nevertheless, including additional variables and interactions may require a larger sample size to maintain adequate statistical power. Further, specification 1(b) is more complex to implement and interpret compared to specification 1(a).

As such, both specification 1(a) and 1(b) have their relative merits and drawbacks, and thus implementing both would allow for a more rigorous assessment of how minimum wages may or may not impact men and women differently (as each specification will likely address the concerns of the other). Further, implementing both approaches enables us to assess the reliability of each model.

Specifications 1(a) and 1(b) are depicted as follows:

$$Y_{ikt} = \beta_0 + \beta_1 POST_t + \beta_2 Sector_k + \beta_3 POST_t * Sector_k + X_{ikt} + \varepsilon_{ikt} \qquad 1(a)$$

Y_{ikt} is the outcome of interest (real hourly wage, typical weekly hours worked and written contract coverage) for individual i, in group k, in period t. $POST_t$ is a dummy variable, which equals 1 if an observation takes place in the post-law period and 0 for the pre-law period. It shows how the outcome variable may have changed between the pre- and post-law periods for the comparison group. The dummy variable $Sector_k$ indicates if a person is in the treatment (k=1) or comparison group (k = 2). If an individual is employed in a sector covered by sectoral minimum wage laws (treatment), $Sector_k$ equals 1, and if they are in the comparison group, it equals 0. $POST_t * Sector_k$ is the DID estimator for specification 1(a), which allows us to measure shifts in the outcome of interest for the treatment group relative to the comparison group between the pre- and post-law periods. Specifically, the coefficient β_3 captures how changes in the outcome of interest may have varied for those covered by minimum wages relative to individuals in the comparison group (between the pre- and post-law periods). Thus, β_3 allows us to directly isolate the effect of minimum wages on the outcome of interest.[28] X_{ikt} controls for several worker characteristics such as educational attainment, age, and race.

[28] This holds if there are no additional shocks that only affect covered workers in the post-law period.

$$Y_{ikt} = \beta_0 + \beta_1 POST_t + \beta_2 Sector_k + \beta_3 Female + \beta_4 POST_t * Sector_k + \beta_5 POST_t * Female + \beta_6 Sector_k * Female + \beta_4 POST_t * Sector_k * Female + X_{ikt} + \varepsilon_{ikt} \quad 1(b)$$

For specification 1(b), $POST_t$ reflects the impact of being in the pre- versus post-law period on the outcome of interest for men in the comparison group. $Sector_k$ measures the effect of being in a covered sector versus uncovered sector (in the pre-law period) for men only. $Female$ represents the difference in the outcome of interest between males (=0) and females (=1) in the among individuals not covered by minimum wage laws (in the pre-law period). $POST_t * Sector_k$ captures the differential impact of sectoral minimum wage laws after implementation for males. It shows how the outcome variable changes for males in sectors that become covered by the laws compared to those in sectors not covered, after the policy is introduced. Thus, β_4 represents the DID estimate of the treatment effect on males. The coefficient on $POST_t * Female$ (β_5) represents the change in the outcome of interest for females after the policy implementation, in sectors not covered by the minimum wage laws. It captures whether the time effect differs for females compared to males. The coefficient on $Sector_k * Female$ (β_6) reflects the difference in the outcome of interest for females compared to males, in sectors that are covered by the sectoral minimum wage laws, before the policy is implemented. $POST_t * Sector_k * Female$ captures the differential impact of the sectoral minimum wage laws on females compared to males, in sectors that become covered by the laws, after the policy is implemented. The DID estimate of the causal impact of the treatment on females is $\beta_4 + \beta_7$. X_{ikt} controls for various worker characteristics.

For specification 2, the "wage gap" DID approach is used. This specification is employed to address the primary concern of specification 1, whereby those selected to be in the comparison group could switch to the treatment group and vice versa, potentially biasing the results (Bhorat et al., 2016). Further, although the comparison groups created for this analysis are similar to those in the treatment groups, there are slight differences, and thus these small discrepancies may also influence the findings. While controls are added to the regressions for specification 1 to mitigate this concern as much as possible, there are likely some unobserved characteristics that may vary slightly between the treatment and control groups and therefore the results of specification 1 should be interpreted with caution. As such, specification 2 serves as the preferred specification for this analysis.

To determine the impact of the law on each sector, specification 2 uses the geographic variance in minimum wages (at the district council level) in comparison to an estimated local area median wage. This DID specification assesses whether the dependent variable (probability of employment in the sector[29], real hourly wage, weekly hours work and probability of having a written contract) has changed significantly in districts with greater discrepancies between the pre-law median wage and the minimum wage. Importantly, for the employment regression, the sample includes all those in the covered sector, as well as those in employment comparison group (discussed in further detail below). In contrast, for the log real hourly wage, usual weekly work hours worked and written contract likelihood regressions, only those in the covered sector

[29] The employment dependent variable is defined as follows: the probability of being employed in a given minimum wage sector (retail or agriculture) or not.

are included. As with the specification 1, specification 2 employs both a double DID model, specification 2(a), and a triple DID model, specification 2(b).

Specifications 2(a) and 2(b) are represented as follows:

$$Y_{ijt} = \beta_0 + \beta_1 POST_t + \beta_2 WG_j + \beta_3 POST_t * WG_j + X_{ijt} + \varepsilon_{ijt} \quad (2a)$$

Y_{ijt} is the outcome of interest for individual i, in district j, in period t. The coefficient for $POST_t$ (β_1) captures the effect of the post-law period on the outcome of interest. X_{ijt} controls for several individual characteristics. The wage gap (WG_j) captures cross-sectional variation in the log difference between the pre-law median wage and the minimum wage across district councils.

The wage gap is depicted as follows:

$$WG_j = \log\left[minimum\left(w_j^*\right)\right] - \log\left[median\left(w_j'\right)\right]$$

w_j^* represents the first minimum wage for district j (i.e., the value of the minimum wage in the year it was introduced). w_j' is the median worker wage in district j in the year prior to the enactment of the minimum wage. Workers in districts with a greater wage gap are anticipated to experience higher rises in real hourly wages in the post-law period (if employers are compliant). The coefficient on $POST_t * WG_j$ (β_3) captures how the outcome of interest varies across districts (with varying wage gaps in the pre-law period) between the pre- and post-law periods.

$$Y_{ikt} = \beta_0 + \beta_1 POST_t + \beta_2 WG_j + \beta_3 Female + \beta_4 POST_t * WG_j + \beta_5 POST_t * Female + \beta_6 WG_j * Female + \beta_7 POST_t * WG_j * Female + X_{ijt} + \varepsilon_{ijt} \quad (2b)$$

The coefficient for $POST_t$ (β_1) reflects the effect of the post-law period on the outcome of interest for men only. The WG_j coefficient (β_2) represents how the cross-sectional variation in the log difference between the pre-law median wage and the minimum wage across district councils impacts the outcome of interest for men during the pre-law period. $Female$ is the dummy variable where 1 indicates the individual is female and 0 indicates male. The coefficient for $POST_t * WG_j$ (β_4) measures how the impact on the outcome of interest varies across districts between the pre-law period and the post-law period for men. Thus, β_4 reflects the DID estimate of the treatment effect of the minimum wage laws on males. The coefficient for $POST_t * Female$ (β_5) captures how the impact of the post-law period on the outcome of interest differs between women and men. The coefficient for $WG_j * Female$ (β_4) measures how the effect of cross-sectional variation in the wage gap across district councils on the outcome of interest differs between women and men during the pre-law period. The coefficient for $POST_t * WG_j * Female$ (β_7) measures how the impact of the minimum wage law on the outcome of interest differs for women compared to men, across districts with varying wage gaps. As such, the DID estimate of the causal effect of minimum wages on females is $\beta_4 + \beta_7$. X_{ikt} controls for various worker characteristics.

3.3 Sample

As noted in section 2, prior to the introduction of the NMW, there were ten sectors with mandated minimum wages. However, due to data constraints[30] or a disproportionate ratio of men to women within a given sector (such as in the domestic worker and taxi sectors), this paper will focus on the retail and agriculture (farmworkers) sectors. As will be demonstrated below and in later sections of this paper, these two sectors have important differences in terms of their level of aggregate wages and minimum wage floors, gender discrepancies in pay in the pre-law period, as well as differences in how their minimum wages are set. Thus, analysing the retail and agricultural sectors provides a unique opportunity to establish how these factors may influence the impact of minimum wages on men versus women.

Only full-time workers (individuals working more than 27 hours per week) in the retail and agricultural sectors are included for the regressions on log real hourly wage, usual weekly work hours worked and whether an individual has a written contract, while all individuals (both part-time and full-time) within these two sectors are included in the employment regressions. Employed individuals reporting zero or missing wages, self-employed workers and government employees are excluded from the analysis.

Sectoral minimum wages were introduced in February 2003 for the retail sector, and in March 2003 for farmworkers. The sectoral minimum wages for retail workers and farmworkers were set as follows:

Table 1: Sectoral Wage Determinations Structures (Retail and Farmworkers)

Sector	Occupation	Areas	Full-time/Part-time	Firm Size
Retail	Managers, clerks, sales assistant, shop assistant, drivers, forklift operators, cashiers	A, B and C	>27h/week ≤27h/week	>5 employees ≤5 employees
Farmworkers	N/A	A and B	N/A	N/A

Source: Bhorat et al. (2016)

Table 1 illustrates that sectoral minimum wages are enforced according to area for farmworkers, while for retail workers, wages are determined according to occupation, area, full-time/part-time status, and firm size. For this analysis, managers and clerks in the retail sector are excluded as they are inherently quite different from all other workers in the sector, specifically in terms of wages earned and education level[31].

As discussed in section 2, differences in how minimum wages are structured between the retail and agricultural sectors are likely to result in disparities in the impact of minimum wages on gender pay gaps (and possibly other outcomes). Given that the retail sector determines minimum wage floors according to occupation – if there is significant occupational segregation within the

[30] Other sectors were excluded for the following reasons: (1) there is no available data for the pre- and post-law periods for the contract cleaning (minimum wage enacted in 1999) and hospitality (minimum wage enacted in 2007) sectors; (2) the sample size for the forestry and civil engineering sectors were too small to conduct any meaningful analysis (Bhorat et al., 2016).
[31] Retail managers and clerks tend to have much higher wages and levels of education compared to all other retail workers.

sector and women tend to be concentrated in occupations with lower wage floors, minimum wages may do little to reduce pay discrepancies and may in fact exacerbate gender pay gaps. In contrast, the minimum wages for farmworkers are only determined according to area and all those included in this group work in very similar occupations – thus the role of occupational segregation on wage gaps is unlikely to feature for the agricultural sector.

These differences in how minimum wages are set may provide some insights into whether a "blanket" minimum wage for all workers (such as the NMW) is more suited to reducing gender pay gaps (if compliance rates are similar between men and women) – rather than setting wages at the occupational level when women tend to predominate in lower-paying occupations and therefore may receive lower wage floors – as showcased by Broadway and Wilkins (2017). A potential caveat of a "blanket" NMW may be that if, on average, women's wages fell further below the minimum relative to men's – this could place them at a higher risk of unemployment or reductions in hours worked and/or fringe benefits, as greater increases will be required to meet the mandated minimum (if compliance is strictly enforced). In contrast, women's risk of the potential negative effects of minimum wages may be smaller if wages are determined at the occupation and/or sectoral level (and if required wage increases are smaller on average than in the case of the NMW).

However, as of 2006, part-time retail workers received slightly higher minimum wages relative to full-time retail workers (across all occupations). Since women are more likely to be part-time workers – this is anticipated to have a positive impact on the gender wage gap. Nevertheless, this may also place women at greater risk of the potential adverse consequences of minimum wages – given that greater increases will be required to be compliant with the minimum wage laws. As is shown in **table 22** in **appendix A.1**, across all periods most female retail workers are full-time, so the influence of the different minima assigned to part-time and full-time workers is likely marginal.

To implement specification 1, a comparison (control) group must be derived for each of the sectors. As already noted, the comparison group must consist of workers with similar characteristics to those in the treatment group, and who are not anticipated to be covered by the minimum wage.

For the real hourly wage, weekly hours worked and written contract regressions, the comparison groups (for specification 1) were constructed according to the following:

- Retail Control Group: Workers in uncovered semi-skilled occupations (such as uncovered craft and related trades workers, plant and machine operators and assemblers, as well as service, shop, and market sales employees), who are aged 15–65 years, earn less than R10,000 per month[32] (in 2000 prices) and have less than twelve years of schooling. Self-employed, government workers, trade union members, part-time workers and individuals in sectors impacted by another minimum wage law are excluded.

[32] This value is based on Bhorat et al.'s (2016) finding that workers in minimum wage sectors do not have a monthly income higher than R10000 between 2001-2007 (according to cumulative distribution functions for each sector).

- Farmworkers Control Group: Workers in uncovered elementary occupations, aged 15–65 years, who earn less than R10,000 per month (in 2000 prices) and have less than twelve years of schooling. Self-employed, government workers, union members, part-time workers and those in sectors impacted by another minimum wage law are excluded. Further, only African and Coloured workers are included, given that farmworkers are almost entirely made up of workers from these two race groups.

The above specifications ensure that the individuals in the control groups are on aggregate as similar as possible to those in the covered sectors. In addition, they ensure that the female (male) control group individuals are, on average, very similar to the females (males) in the covered sector.

The employment regression (which uses specification 2) requires the sample to include those in the covered sector (all of which are employed – full-time and part-time), as well as those who would serve as a comparison group. The comparison group for the two covered sectors are those who are aged 15–65 years, with no more than 12 years of schooling and are either employed or seeking work. Importantly, both full-time and part-time workers are included. Workers employed in other covered sectors, union members, self-employed workers and government employees are excluded from this comparison group.

4. Descriptive Statistics

This section provides a descriptive overview of the shifts in employment, real hourly wages, weekly hours worked, written contract coverage and compliance for men and women between the pre- and post-law periods. The focus of this descriptive overview is to compare these shifts between men and women in each covered sector, as well as to compare the shifts in a covered sector to those of their comparison (control) group (except for compliance, which exclusively focuses on men and women in the covered sector). Subsection 4.1 focuses on the retail sector, while subsection 4.2 is dedicated to the agricultural sector (farmworkers).

4.1 Retail Workers

Figure 1 appears to depict an overall upward trend in employment for both men and women in the retail sector between March 2001 and September 2007, however this upward trend seems to be stronger for men than for women. The aggregate increase in employment for men and women in the retail sector is 21.87% and 8.52% respectively between the pre- and post-law periods **(figure 9, Appendix A.2)**. Importantly, there is no indication of a reduction in employment following the implementation of sectoral minimum wages. The employment trends for men and women in the control group appear to follow quite a similar pattern, nevertheless women in this group do not experience the drop in employment between March 2007 and September 2007 that is endured by women in the retail sector. The aggregate increase in employment for men and women in the control retail group is 17.73% and 9.75% respectively between the pre- and post-law periods **(figure 10, Appendix A.2)**.

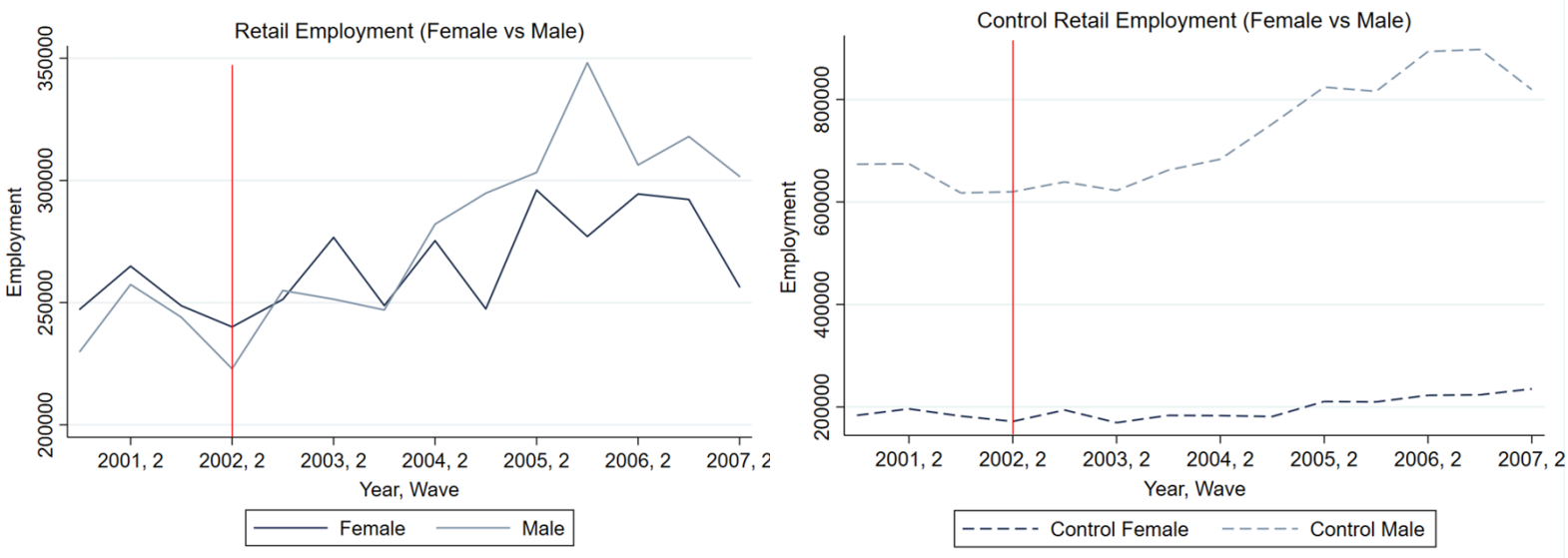


Figure 1: Female and Male Employment in the Retail Sector vs Female and Male Employment in the Retail Control Group between March 2001 and September 2007

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: The vertical red line reflects the period just prior to the introduction of the sectoral minimum wage. The x axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2).

Tables 2-5 provide the mean values of real hourly wages, weekly hours worked and written contract coverage by year and wave, as well as the average change in these variables between the pre- and post-law periods, for men and women in the retail sector and the control retail group. For both men and women in the retail sector, hourly wages improve, on average, between the pre- and post-law periods (**tables 2 and 4**). However, men appear to gain more than women (3% vs 1% increase). A t-test on the mean wages for male and female retail workers in pre- and post-law periods indicates that there is no statistically significant difference in wages between these two periods for both groups of workers.

Interestingly though, in the period immediately after the implementation of sectoral minimum wages, women's wages rise quite significantly, while the average wages for men decline slightly. This is illustrated in the top two panels of **figure 2**, whereby the post-law kernel density function (KDF) for women in the retail sector reveals a clear (albeit small) rightward shift relative to the pre-law KDF. This indicates that, on average, women in the retail sector earned higher wages in March 2003 compared to September 2002. In contrast, there is no apparent rightward shift of the post-law KDF for men in the retail sector. In fact, slightly more male retail workers seem to be concentrated at the lower end of the earnings spectrum in March 2003 relative to September 2002. Nevertheless, by September 2007, there is a clear rightward shift of the KDF for men in the retail sector, with a greater proportion of individuals with hourly wages at or above the minimum wage.

The September 2007 KDF for women in the retail sector also reflects a further rightward shift from the post-law KDF; however, this shift for female retail workers appears to be much smaller compared to the shift experienced by men in the retail sector (for September 2007). Further, women in the retail sector tend to be more concentrated at the minimum wage relative to men, as well as far fewer appear to be earning above the minimum wage (in September 2007).

Kolmogorov–Smirnov (K-S) tests were employed to determine whether the pre-law, post-law and September 2007 log wage distributions for male and female retail workers (**figure 2**) are significantly different from one another. For both male and female retail workers, there are no significant differences between the pre-law and post-law log wage distributions. However, significant differences are detected for both groups of workers between the pre-law and September 2007 log wage distributions – with the K-S test confirming that the pre-law log wage distribution contains significantly smaller values compared to the September 2007 distribution.

Table 3 reveals that women in the retail control group experience an aggregate reduction in real hourly wages between the pre-law and post-law periods (-1%). A t-test reveals that this mean difference is statistically significant. In contrast, the mean hourly wages of men in the control retail group increase between these periods and to a greater degree than men in the retail sector (12% vs 3% increase) (**table 5**). Once again, this mean difference is statistically significant. The bottom two panels of **figure 2** reflect the fact women in the retail control group endure a decline in real hourly wages between September 2002 and March 2003. While the average hourly wages of women in both the retail sector and the control retail group rise in September 2007

Table 2: Summary Statistics (Retail Female)

	Pre-Law Period				Post-Law Period										
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Δ
Real Hourly Wage	6.46	7.23	6.52	5.76	6.51	6.24	5.96	5.64	6.11	6.21	7.71	6.98	6.78	7.68	0.09 (1%)
Weekly Hours Worked	47.48	44.99	45.67	45.61	44.43	45.01	46.32	45.57	45.74	47.53	44.94	44.86	46.54	44.79	-0.36 (.7%)
Written Contract	.52	.46	.58	.55	.60	.63	.69	.66	.69	.68	.68	.72	.69	.69	0.15 (28%)
N	550	602	595	534	532	563	506	585	567	593	591	646	651	545	

Table 3: Summary Statistics (Control Retail Female)

	Pre-Law Period				Post-Law Period										
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Δ
Real Hourly Wage	6.24	5.59	5.54	5.48	5.36	5.43	5.57	5.17	6.01	4.98	5.85	5.49	6.61	6.33	-0.03 (1%)
Weekly Hours Worked	46.90	45.60	45.96	46.38	45.11	44.59	46.05	44.93	46.15	45.94	45.10	44.78	44.34	43.79	-1.13 (2%)
Written Contract	.41	.40	.46	.53	.51	.58	.63	.58	.57	.49	.55	.58	.61	.59	0.12 (27%)
N	451	420	420	364	409	349	366	445	431	454	467	482	491	470	

Table 4: Summary Statistics (Retail Male)

	Pre-Law Period				Post-Law Period										
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Δ
Real Hourly Wage	8.62	8.23	7.24	7.01	6.89	6.97	7.75	7.31	7.74	8.09	8.89	8.07	7.83	10.49	0.23 (3%)
Weekly Hours Worked	49.63	48.52	48.61	48.41	48.92	48.98	48.30	47.33	48.34	49.31	46.78	49.00	48.21	46.42	-0.63 (1%)
Written Contract	.54	.49	.57	.55	.61	.66	.74	.68	.72	.69	.72	.71	.67	.76	0.16 (30%)
N	559	597	585	516	539	512	507	544	604	555	645	565	595	556	

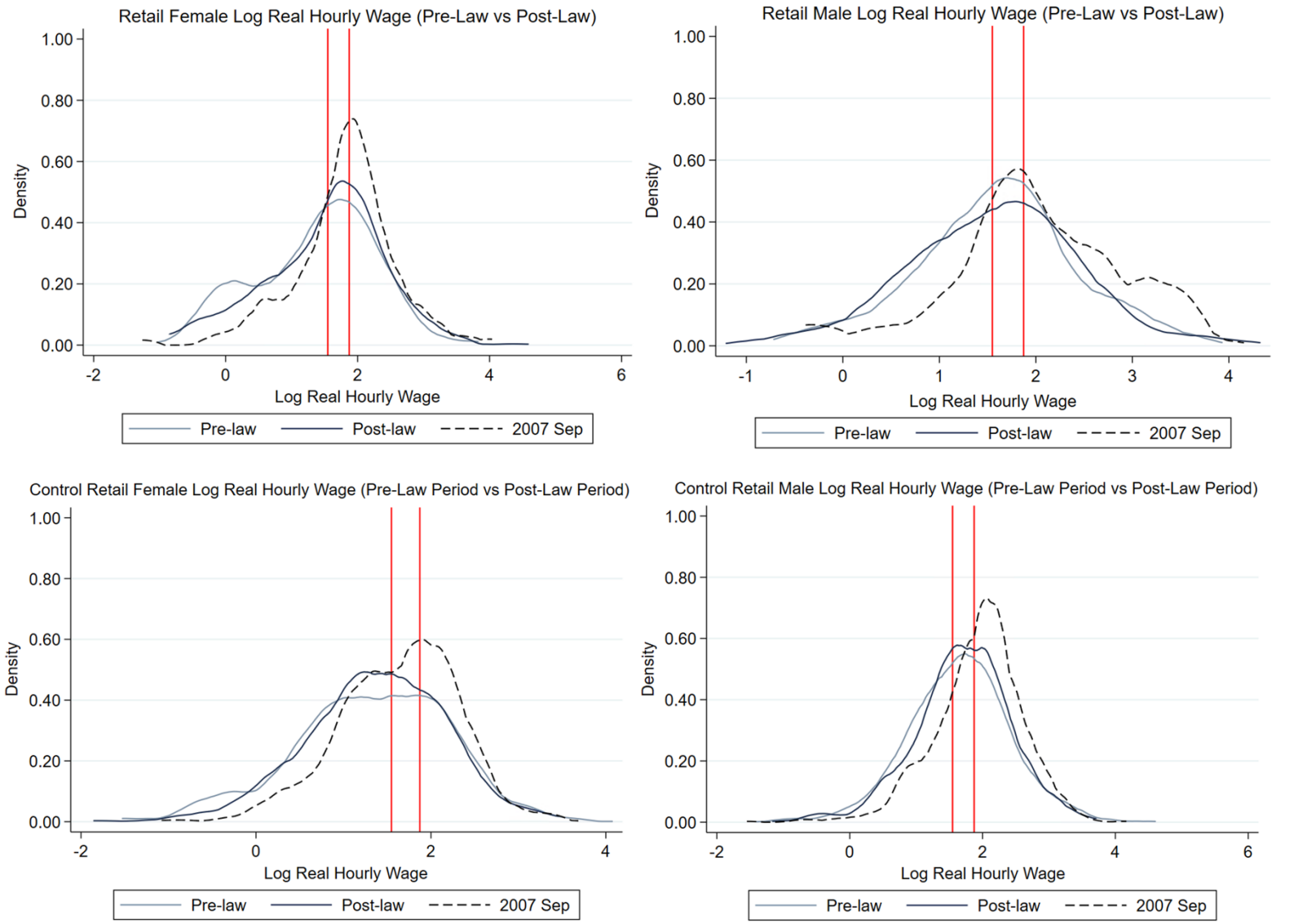
Table 5: Summary Statistics (Control Retail Male)

	Pre-Law Period				Post-Law Period										
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Δ
Real Hourly Wage	7.42	8.00	7.51	6.95	7.01	7.67	7.34	7.61	7.86	7.20	8.21	7.77	8.09	8.42	0.85 (12%)
Weekly Hours Worked	49.11	48.65	49.31	49.73	47.48	46.24	48.11	46.38	46.68	48.58	46.47	46.94	47.68	45.40	-1.44 (3%)
Written Contract	.41	.40	.49	.48	.54	.58	.64	.58	.55	.53	.57	.53	.53	.56	0.12 (27%)
N	1621	1508	1504	1349	1273	1264	1261	1443	1557	1597	1630	1720	1707	1595	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

compared to September 2002 and March 2003, there is a much greater share of women in the control retail group earning below the minimum wage in September 2007. Further, although the "peak" of the KDF for men in the control retail group is at a slightly higher wage than the peak for men in the retail sector in September 2007, the proportion of men earning wages at the upper end of the earnings spectrum is higher for men in the retail sector compared to their control group counterparts.

Once again, K-S tests were used to determine whether the three log wage distributions in figure 2 for men and women in the control retail group are significantly different. As with male and female retail workers, the pre-law and post-law distributions are not significantly different from one another for both men and women in the control retail group. In contrast, the pre-law and September 2007 distributions are significantly different for both groups, with values for the pre-law log wage distribution being significantly smaller than those of the September 2007 distribution.



<u>Figure 2</u>: Female and Male Log Real Hourly Wages in the Retail Sector vs Female and Male Log Real Hourly Wages in the Retail Control Group between March 2001 and September 2007

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Note: The first vertical red line depicts the mean minimum wage in March 2003, while the second vertical red line depicts the mean minimum wage in September 2007. Pre-law captures the real hourly wages in September 2002, whereas post-law captures real hourly wages in March 2003.

Figure 3 reflects the finding that men experience slightly higher wage increases than women in the retail sector between the pre- and post-law periods – as the unadjusted gender wage gap slightly increased between these periods (0.84 to 0.82). Nevertheless, the gender wage gap in the retail sector appears, for the most part, to be smaller than the pay gap between men and women in the retail control group in the post-law period. Further, the gender wage gap in the retail control group seems to have significantly worsened between the pre- and post-law periods (0.91 to 0.74).

Figure 13 (Appendix A.3) shows changes in the unadjusted gender wage gap across the 10th, 50th (median) and 90th wage percentiles for the retail and retail control groups. For retail workers, the gender wage gap is the highest among those in the 10th percentile in the pre-law period (0.77) and lowest among the 50th percentile (0.91). However, the gender wage gap reduces for both the 10th (0.77 to 0.84) and 50th (0.91 to 0.96) percentile workers between the pre- and post-law periods. In contrast, the gender wage gap for retail workers in the 90th percentile worsens between the pre- and post-law period – shifting from 0.85 to 0.83. Thus, the aggregate increase in the gender wage gap for retail workers is likely driven by workers at the higher end of the earnings distribution. For the retail control group, workers in the 50th percentile have the highest gender wage gap (0.71) in the pre-law period, while those in the 90th percentile endure the lowest gender wage gap (0.80). Nevertheless, the gender wage gap slightly improves for workers in the 50th percentile (0.71 to 0.72) between the pre- and post-law periods, while it worsens for those in the 10th (0.74 to 0.68) and 90th (0.80 to 0.75) percentiles.

<u>Figure 3</u>: Unadjusted Gender Wage Gap in the Retail Sector vs in the Retail Control Group between March 2001 and September 2007

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: 1. The gender wage gap represents women's aggregate real hourly wages divided by men's aggregate real hourly wages in a given wave. Specifically, figure 3 is the unadjusted wage gap – it does not account for other factors that determine pay such as education level and experience. 2. The vertical red line reflects the period in which the sectoral minimum wage was instituted. 3. The x axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2).

In terms of changes in weekly hours worked, **tables 2-5** show that men and women in both the retail sector and retail control group endure declines in weekly hours worked between the pre- and post-law periods. Men in the retail sector experience a slightly larger reduction in average weekly hours worked relative to women in the sector (1% versus 0.7% decrease). The same holds true for the retail control group. Interestingly, the declines in weekly hours worked are greater in the retail control group compared to the retail sector – for both men (3% versus 1% decrease) and women (2% versus 0.7% decrease). Further, in all periods men in the retail sector and retail control group work more hours per week on average compared to their female counterparts.

T-tests are used to assess whether the average weekly hours worked in the pre-law period and the post-law period are significantly different from one another. For female retail workers there appears to be no significant differences, while for male retail workers the weekly hours worked are significantly greater in the pre-law period. The average weekly hours worked is also significantly higher in the pre-law period for both men and women in the retail control group.

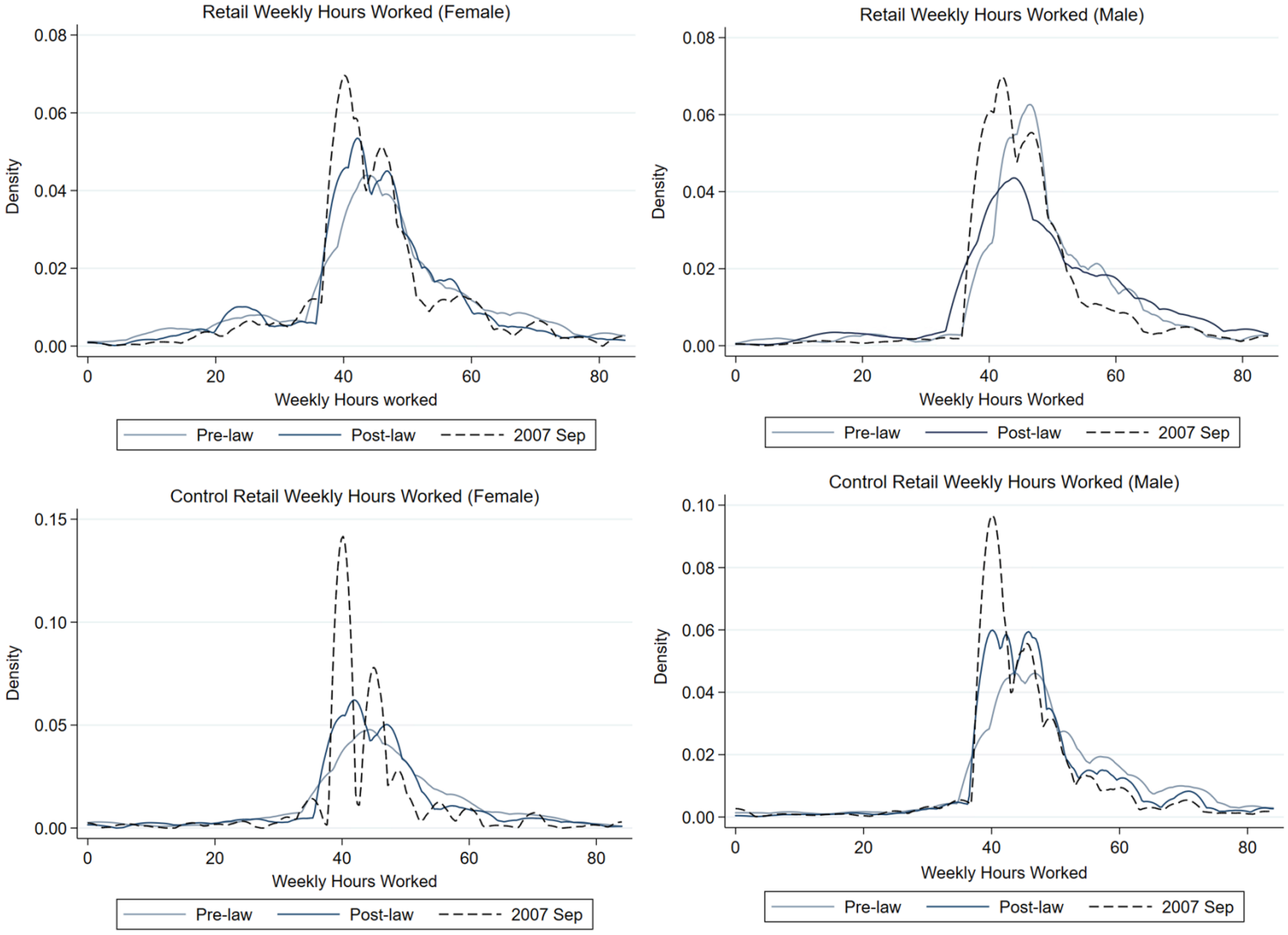


Figure 4: Female and Male Weekly Hours Worked in the Retail Sector vs Female and Male Weekly Hours Worked in the Retail Control Group between March 2001 and September 2007

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Note: Pre-law captures the weekly hours worked in September 2002, whereas post-law captures the weekly hours worked in March 2003.

Figure 4 clearly demonstrates the leftward shift in weekly hours worked for all groups. Further, there appears to be an increasing proportion of individuals working 40 hours per week between September 2002 to September 2007 – this is particularly true for men and women in the retail control group.

K-S tests were employed to assess whether the pre-law, post-law and September 2007 weekly hours worked distributions are significantly different from one another for all groups. For female retail workers, there are no significant differences in the pre-law and post-law distributions. However, significant differences are detected between the pre-law and September 2007 weekly hours worked distributions, whereby the values for the pre-law distribution are significantly greater. For male retail workers, significant differences are found between both the pre-law and post-law distributions and the pre-law and September 2007 distributions – with the values for the pre-law distribution of weekly hours worked being significantly higher than the values of the post-law and September 2007 distributions. The K-S tests for men and women in the retail control group appear to mirror the findings of the K-S tests for male and female retail workers.

Referring to **tables 2-5**, written contract coverage has expanded between the pre- and post-law periods for all groups; however, those in the retail sector experience greater gains on average relative to the retail control group. Men in the retail sector benefit slightly more than their female counterparts in terms of changes between the pre- and post-law periods (30% versus 28% increase), as well as a higher proportion of men have a written contract compared to women in all periods except in March 2002 and March 2007. T-tests reveal that there are significant differences in average written contract coverage between the pre- and post-law periods for all groups, with contract coverage being significantly higher in the post-law period.

To assess the extent of minimum wage compliance in the retail sector (and for the agricultural sector – subsection 4ii), this paper employs the "Index of Minimum Wage Violation" developed by Bhorat, Kanbur and Mayet (2013b). This index allows us to determine the share of workers who earn below the minimum wage (incidence of minimum wage violation), as well as how far each worker's wage fall below the minimum wage (depth of minimum wage violation).

The Index of Minimum Wage Violation is constructed as follows:

$$V(W^m, w_i) = E\left\{\left[\frac{W^m - w_i}{W^m}\right]^{\alpha}\right\}$$

where W^m is the aggregate minimum wage for the covered sector in a given year, and w_i represents the real hourly wage earned by each worker. When $\alpha = 0$ (V0 in tables 5 and 6), this measures the share of covered workers earning below the minimum wage. When $\alpha = 1$ (V1 in **tables 6 and 7**), this determines the average gap between actual real hourly wages earned by violated workers and the minimum wage in a given year. The ratio V1/V0 allows us to interpret V1 as it represents, in percentage terms, the difference between the average real hourly wages earned by violated workers and the minimum wage. In other words, violated workers earn V1/V0 percent below the minimum wage, on average. When $\alpha = 2$ (V2 in **tables 6 and 7**), this represents the squared gap between real hourly wages and the minimum wage (the square of V1),

whereby more weight is placed on wages that fall to a greater extent below the minimum wage.

Tables 6 and 7 reveal that the proportion of men earning below the minimum wage is slightly higher (between 33-35%) than the proportion of women in 2003 (between 30-31%); however, the incidence of minimum wage violation is greater for women from 2004 onwards (except in March 2007). Further, the average proportion of women violated between 2003 and 2007 is slighter greater (35%) than the average proportion of men violated during this period (34%). The depth of violation (V1) is, on average, higher for women (0.24) relative to men (0.20). The same holds true for the aggregate estimates of V2, which stand at 0.12 for women and 0.11 for men on average between 2003 and 2007. The ratio V1/V0 indicates that violated female workers earn, on average, 62% below the minimum wage. Whereas, violated male workers earn, on average, 58% below the minimum wage. Thus, **tables 5 and 6** suggest that women in the retail sector are slightly more vulnerable to minimum wage non-compliance, both in terms of incidence and depth, relative to their male counterparts.

Table 6: Minimum Wage Violation (Retail Female)

	2003, 1	2003, 2	2004, 1	2004, 2	2005,1	2005,2	2006,1	2006,2	2007, 1	2007, 2	Average
V0	. 3190	. 3035	. 3363	.3440	. 3922	.3554	.3639	.3648	.3869	.3473	0.3513
V1	. 1973	. 1983	. 2425	.2327	. 2511	.2418	.1874	.2124	.2458	.1803	0.2433
V2	.1126	.1098	.1399	.1319	.1506	.1393	.1024	.1152	.1476	.1001	0.1249
V1/V0	. 6182	. 6535	. 7211	.6763	. 6404	.6804	.5149	.5821	.6351	.5191	0.6241
N	355	357	321	432	424	409	446	494	494	391	

Table 7: Minimum Wage Violation (Retail Male)

	2003, 1	2003, 2	2004, 1	2004, 2	2005,1	2005,2	2006,1	2006,2	2007, 1	2007, 2	Average
V0	. 3515	. 3329	. 3070	. 3399	. 3663	.3285	.3088	.3553	.4082	.3168	0.3415
V1	. 1991	. 2058	. 1862	. 2219	. 2103	.1769	.1984	.1814	.2090	.1743	0.1963
V2	.1044	.1107	.1008	.1240	.1100	.0954	.1173	.0967	.1099	.0985	0.1067
V1/V0	. 5664	. 6183	. 6068	. 6528	. 5741	.5385	.6427	.5105	.5119	.5501	0.5772
N	349	318	299	352	401	385	449	392	431	382	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

4.2 Farmworkers

Figure 5 illustrates that employment among both male and female farmworkers declined slightly in the period following the implementation of sectoral minimum wages (i.e., March 2003 to September 2003). Further, there appears to be an overall declining trend in employment in the post-law period for men and women in the agricultural sector. The aggregate decrease in employment for male and female farmworkers is 14.97% and 17.75% respectively between the pre- and post-law periods, suggesting that women experience slightly greater declines in employment **(figure 11, Appendix A.2)**. In contrast, employment seems to have marginally improved among women in the agricultural control group between the pre- and post-law periods (3.13% increase) **(figure 12, Appendix A.2)**. Men in the control group experience a fairly dramatic dip in employment in the period just before minimum wages were legislated (i.e., September 2002 to March 2003). Further, between the pre- and post-law periods, men in the control group experience a 14.57% decrease in employment **(figure 12, Appendix A.2)**.

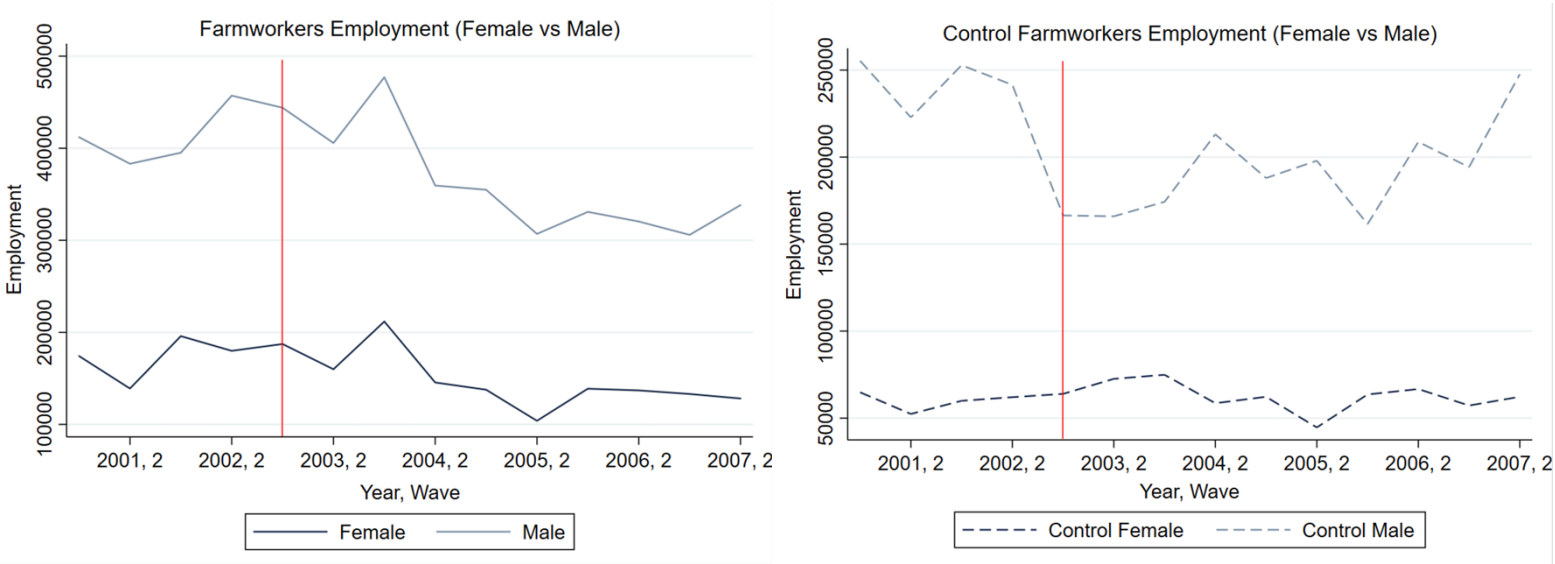


Figure 5: Female and Male Employment in the Agricultural Sector vs Female and Male Employment in the Agricultural Control Group between March 2001 and September 2007

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: The vertical red line reflects the period just prior to the introduction of the sectoral minimum wage. The x axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2).

Tables 8-11 showcase the mean values of real hourly wages, weekly hours worked and contract coverage by year and wave, as well as the average change in these variables between the pre- and post-law periods, for men and women in the agricultural sector and the agricultural control group. The real hourly wages improve on average for both men and women in the agricultural sector between the pre- and post-law periods, with women experiencing slightly greater gains (42% versus 31% increase).

Table 8: Summary Statistics (Farmworkers Female)

	Pre-Law Period					Post-Law Period									
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	2.21	2.25	2.15	2.06	2.29	2.68	2.54	2.95	3.18	3.14	3.20	3.29	3.18	3.81	.92 (42%)
Weekly Hours Worked	48.79	47.57	47.65	48.51	47.78	46.25	48.32	45.80	47.06	47.97	47.98	46.14	48.49	46.58	-0.88 (2%)
Written Contract	.22	.30	.27	.34	.41	.39	.48	.42	.37	.44	.43	.49	.44	.60	0.14 (45%)
N	608	463	679	546	588	478	597	568	573	509	615	615	616	532	

Table 9: Summary Statistics (Control Farmworkers Female)

	Pre-Law Period					Post-Law Period									
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	3.85	4.04	3.55	3.94	4.05	4.01	3.49	4.47	3.82	4.36	4.40	4.55	4.55	4.87	0.39 (10%)
Weekly Hours Worked	46.58	44.90	45.95	42.85	43.93	44.98	43.85	40.88	42.85	43.35	40.36	44.80	42.86	38.06	-2.40 (5%)
Written Contract	.43	.32	.29	.45	.48	.52	.52	.56	.51	.60	.61	.56	.58	.64	0.17 (43%)
N	166	146	154	150	150	154	172	177	191	153	196	166	173	202	

Table 10: Summary Statistics (Farmworkers Male)

	Pre-Law Period					Post-Law Period									
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	2.67	2.60	2.44	2.30	2.46	3.00	2.71	3.13	3.24	3.22	3.50	3.37	3.39	3.95	.78 (31%)
Weekly Hours Worked	53.08	52.07	52.78	51.82	52.09	50.28	50.85	50.52	51.18	51.40	49.73	49.91	50.98	48.21	-2.03 (4%)
Written Contract	.30	.28	.29	.34	.46	.55	.57	.53	.54	.52	.45	.55	.48	.54	0.19 (57%)
N	1513	1298	1473	1419	1324	1258	1322	1434	1370	1359	1467	1385	1381	1305	

Table 11: Summary Statistics (Control Farmworkers Male)

	Pre-Law Period					Post-Law Period									
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	4.18	4.53	4.06	3.92	4.35	4.66	4.81	5.23	5.06	4.87	6.32	6.47	5.99	6.27	1.31 (30%)
Weekly Hours Worked	45.24	42.26	43.60	43.92	47.87	45.94	47.74	44.74	48.16	47.84	47.81	43.73	45.51	44.21	1.61 (4%)
Written Contract	.20	.20	.24	.29	.39	.44	.51	.44	.45	.39	.53	.47	.49	.48	0.20 (76%)
N	663	565	681	614	333	353	357	426	426	392	429	494	485	537	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

The hourly wages also increase for men and women in the control group; however, the rise in wages for women (10%) in this group are less than that of their male counterparts (30%) and women in the agricultural sector (42%). Further, the increase in real hourly wages of men in the agricultural sector is marginally higher than that of men in the control group (31% versus 30% increase). However, the aggregate wages of men and women in the agricultural sector are lower than their counterparts in the control group for every wave.

T-tests are used to determine whether the average hourly wages in the pre-law and post-law periods are significantly different from one another. For all groups, significant differences are detected between the pre-law and post-law average hourly wages, with the post-law wages being significantly higher than the pre-law wages.

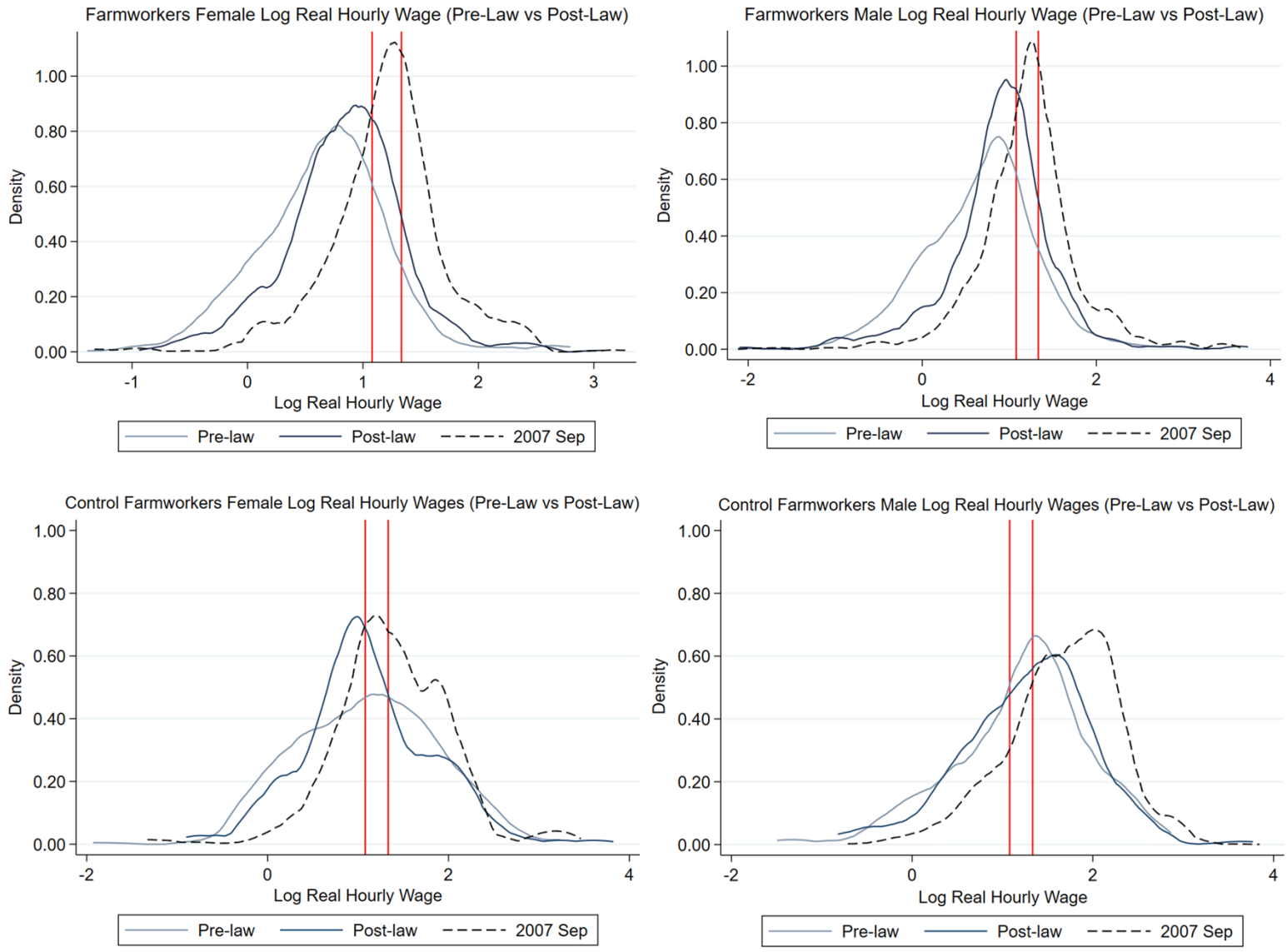


Figure 6: Female and Male Log Real Hourly Wages in the Agricultural Sector vs Female and Male Log Real Hourly Wages in the Agricultural Control Group between March 2001 and September 2007

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: The first vertical red line depicts the mean minimum wage in September 2003, while the second vertical red line depicts the mean minimum wage in September 2007. Pre-law captures the real hourly wages in March 2003, whereas post-law captures real hourly wages in September 2003.

The top two panels of **figure 6** demonstrate a clear rightward shift in real hourly wages earned between the pre- and post-law periods, as well as between the post-law period and September 2007, for both men and women in the agricultural sector. However, a slightly larger proportion of men appear to be earning at the minimum wage in September 2003 (post-law period) compared to women – who appear to have a marginally greater proportion earning below the minimum wage. However, the peak of the KDFs for both men and women is just below the minimum wage in this period. The wage distributions in September 2007 appear to be quite similar for men and women in the agricultural sector, with the peak KDFs falling just below the minimum wage. These patterns suggest that we may see relatively high rates of minimum wage non-compliance among both men and women in the agricultural sector.

K-S tests are employed to assess if the pre-law, post-law, and September 2007 log wage distributions are significantly different from one another for male and female farmworkers. The K-S tests reveal that the pre-law and post-law as well as the pre-law and September 2007 log wage distributions are significantly different from one another for both male and female farmworkers. The values in the pre-law distribution are significantly lower than those in the post-law and September 2007 distribution.

The bottom left panel of **figure 6** reflects the slight decline (indicated in **table 9**) in average real hourly wages for women in the agricultural control group between March 2003 (pre-law) and September 2003 (post-law). Nevertheless, there is a clear rightward shift between September 2003 and September 2007, as well as a greater proportion of women in the control group earning 'higher' wages in September 2007 compared to March 2003. In contrast, there appears to be a slight rightward shift in real hourly wages between the pre- and post-law periods for men in the control group, which is succeeded by a more significant rightward movement between September 2003 and September 2007. Further, the peak of the KDFs in both September 2003 and 2007 for men in the control group are notably greater than the minimum wage for those waves – once again, emphasizing their higher aggregate wages relative to male farmworkers.

K-S tests are used again to determine whether there are significant differences between the pre-law, post-law and September 2007 log wage distributions for men and women in the agricultural control group. These tests detect no significant differences between pre-law and post-law log wage distributions for both men and women in the agricultural control group. However, there are significant differences between the pre-law and September 2007 log wage distributions, with the values in the pre-law distribution being significantly lower.

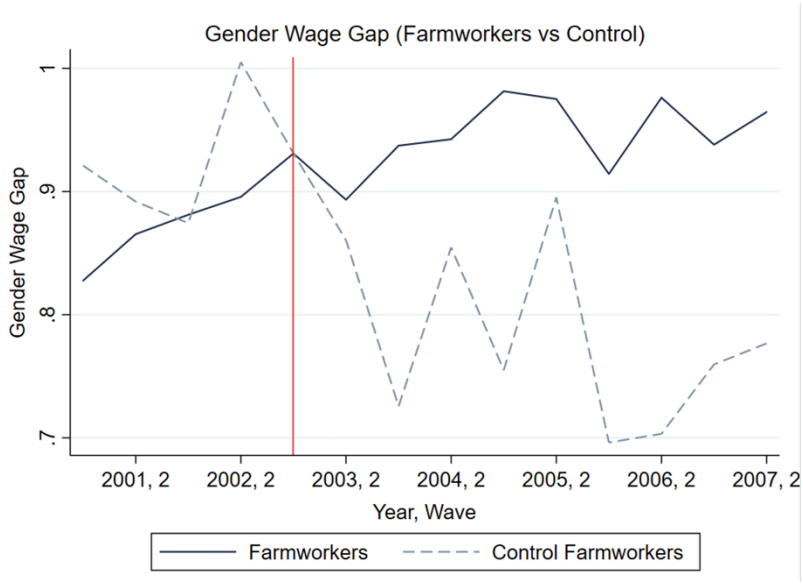


Figure 7: Unadjusted Gender Wage Gap in the Agricultural Sector vs in the Agricultural Control Group between March 2001 and September 2007

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: 1. The gender wage gap represents women's aggregate real hourly wages divided by men's aggregate real hourly wages in a given wave. Specifically, figure 7 is the unadjusted wage gap – it does not account for other factors that determine pay such as education level and experience. 2. The vertical red line reflects the period in which the sectoral minimum wage was instituted. 3. The x axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2).

Figure 7 depicts an improvement in the average unadjusted gender wage gap for workers in the agricultural sector between the pre- and post-law periods (0.88 to 0.95). This improvement reflects the finding (in **tables 7 and 8**) that women in this sector experience greater gains on average in real hourly wages compared to men following the implementation of sectoral minimum wages. In contrast, while the mean gender wage gap was smaller among the agricultural control group in the pre-law period (0.92), it appears to have plummeted to an average of 0.78 in the post-law period. This trend is suggested in **tables 9 and 10**, whereby men in the control group experience much greater improvements in real hourly wages relative to their female counterparts between the pre- and post-law periods.

Figure 14 (Appendix A.3) shows the changes in the unadjusted gender wage gap for the 10th, 50th (median) and 90th percentiles for individuals in the agricultural sector and agricultural control group. For farmworkers, women in the 10th percentile earn approximately the same as their male counterparts on aggregate in the pre-law period. In the post-law period, female farmworkers in the 10th percentile actually earn slightly more on average than male farmworkers – with a gender wage gap of 1.05. For those in the 50th and 90th percentiles, the gender wage gap stands at 0.96 and 0.87 in the pre-law period – and subsequently reduces to 0.97 and 0.93 in the post-law period. Thus, gender pay discrepancies appear to be the highest (in both the pre- and post-law periods) among those at the top of the earnings distribution within the agricultural sector. Nevertheless, the 90th percentile experiences the greatest reductions in the gender wage gap between the pre- and post-law periods.

For the agricultural control group, the gender pay gap is the highest for those in the 50th percentile (0.81) and lowest for those in the 10th percentile (0.97) in the pre-law period. The

gender wage gap worsens for all selected percentiles between the pre- and post-law periods – from 0.97 to 0.89 for the 10th percentile, 0.81 to 0.78 for the 50th percentile and 0.95 to 0.82 for the 90th percentile.

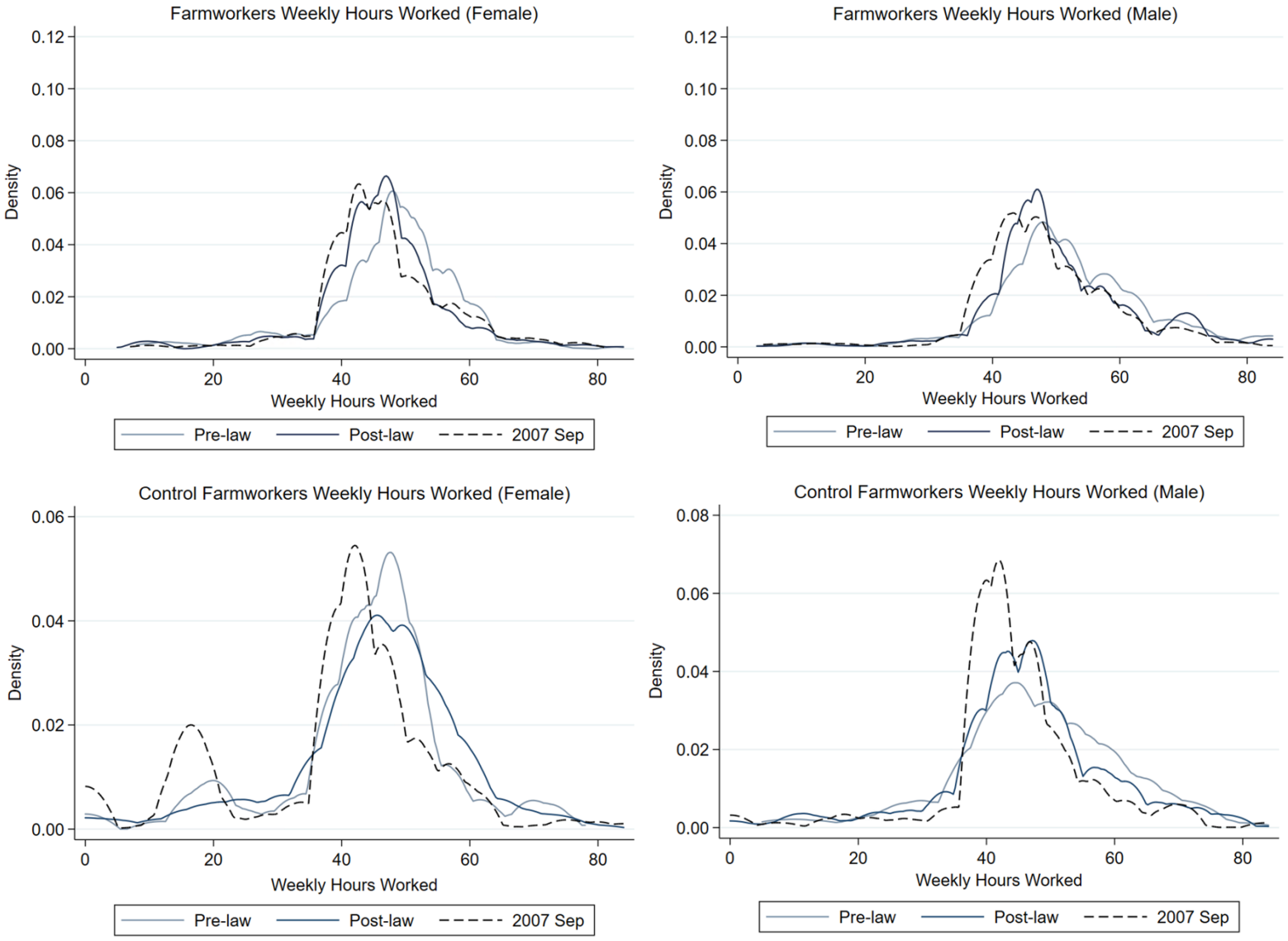


Figure 8: Female and Male Weekly Hours Worked in the Agricultural Sector vs Female and Male Weekly Hours Worked in the Agricultural Control Group between March 2001 and September 2007

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: Pre-law captures the real hourly wages in March 2003, whereas post-law captures real hourly wages in September 2003.

Tables 8 and 9 suggest that both men and women in the agricultural sector endure a reduction in weekly hours worked between the pre- and post-law periods. However, men appear to experience a greater reduction on average (4% versus 2% decrease). **Table 10** shows that women in the agricultural control group also experience a decrease in weekly hours worked, which is greater than that of women in the agricultural sector (5% versus 2% decrease). In contrast, men in the control group see an improvement (4%) in weekly hours worked (table 11). T-tests suggest that the average weekly hours worked in the pre- and post-law periods are significantly different for all groups. The average weekly hours worked is significantly lower in the post-law period for female and male farmworkers and women in the control group, while it is significantly higher for men in the control group.

The top two panels of **figure 8** illustrate a clear leftward shift in weekly hours worked from March 2003 to September 2003, and then from September 2003 to September 2007 for both male and female farmworkers. Further, there is no distinct peak at 40 hours for these workers – which reflects the findings in **tables 7 and 8** whereby men and women in the agricultural sector work on average more than 50 and 45 hours per week respectively across all periods.

K-S tests are used to evaluate if the pre-law, post-law and September 2007 weekly hours worked distributions are significantly different from one another for male and female farmworkers. These tests indicate that there are significant differences between the pre-law and post-law distributions as well as the pre-law and September 2007 distributions for both male and female farmworkers. The values for the pre-law distribution are significantly greater than the values for the post-law and September 2007 distributions.

The bottom left panel of **figure 8** suggests that while there is a slight rightward movement in weekly hours worked for women in the agricultural control group between March 2003 to September 2003, there is a leftward shift between September 2003 to September 2007. The bottom right panel of **figure 8** depicts a slight leftward movement of weekly hours worked for men in the control group between March 2003 to September 2007. Although **table 11** indicated that (on average) weekly hours worked improved between the pre- and post-law periods for men in the control group, the average weekly hours worked in March 2003 were particularly high and higher than the average weekly hours worked in September 2003 and September 2007. Further, compared to agricultural sector, there appears to be a more noticeable peak at 40 hours for men and women in the control group in September 2007. In addition, there seems to be a significant share of women in the control group working less than 20 hours a week in September 2007.

Once again, K-S tests are used to assess whether there are significant differences in the pre-law, post-law and September 2007 weekly hours worked distributions for men and women in the agricultural control groups. For women in the agricultural control group, no significant differences are detected between pre-law and post-law distributions and the pre-law and September distributions. In contrast, while there are no significant differences between the pre-law and post-law weekly hours worked distributions for men in the agricultural control group, significant differences are detected between the pre-law and September 2007 distributions for this group of workers. The values for the pre-law distribution are significantly greater than the values for the September 2007 distributions.

Referring to **tables 8-11**, the proportion of individuals with a written contract increased for both men and women in the agricultural sector and agricultural control group between the pre- and post-law periods. However, men experienced greater gains compared to women in both groups. Women in the agricultural sector encountered greater improvements relative to women in the control group (45% versus 43% increase) – although, women in the control group had, on average, a higher proportion of individuals with a written contract to begin with, as well as higher rates of contract coverage in the post-law period. The opposite holds true for men in the agricultural sector and control group – as men in the control group experienced greater gains (76% versus 57% increase) but had lower rates of contract coverage in the pre-law period, as well as in the post-law period, compared to men in the agricultural sector. T-tests suggest that the average contract coverage in the pre-law and post-law periods are significantly different from one another for all groups, with average contract coverage in the post-law period being significantly higher.

Table 12: Minimum Wage Violation (Farmworkers Female)

	2003, 2	2004, 1	2004, 2	2005, 1	2005, 2	2006, 1	2006, 2	2007, 1	2007, 2	Average
V0	.7282	.8413	.7396	.7860	.7194	.7715	.6775	.7266	.6379	0.7364
V1	.2335	.2955	.2157	. 2748	.2353	.2715	.1874	.2657	.1754	0.2394
V2	.1035	.1377	.0935	.1268	.1032	.1282	.0759	.1280	.0726	.1077
V1/V0	.3207	.3512	.2919	.3496	.3271	.3519	.2766	.3656	.2749	0.3233
N	478	597	568	573	509	615	612	616	532	

Table 13: Minimum Wage Violation (Farmworkers Male)

	2003, 2	2004, 1	2004, 2	2005, 1	2005, 2	2006, 1	2006, 2	2007, 1	2007, 2	Average
V0	.6288	.7780	.6854	.7267	.6887	.7436	.6606	.7055	.6229	0.6934
V1	.1854	.2504	.2039	.2379	.2224	.2572	.1969	.2493	.1828	0.2207
V2	.0798	.1119	.0889	.1099	.1042	.1232	.0883	.1187	.0794	.1005
V1/V0	.2948	.3219	.2975	.3274	.3229	.3458	.2981	.3533	.2935	0.3172
N	1258	1322	1434	1370	1359	1467	1388	1381	1305	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

As speculated above, **tables 12 and 13** indicate that the incidence of minimum wage violation (V0) is shockingly high for both men and women in the agricultural sector. However, in all periods, the incidence of violation is higher for women compared to men. The average value for the incidence of violation between September 2003 to September 2007 for women is 73.6% compared to 69.3% for men.

The depth of violation (V1) is, on average, slightly greater for women (0.24) relative to men (0.22). The same holds true for the V2 estimates – which stand at 0.11 for women and 0.10 for men. The ratio V1/V0 indicates that violated male and female workers earn on average 31.7% and 32.3% below the minimum wage. Thus, **tables 12 and 13** suggest that while both men and women in the agricultural sector endure high rates of non-compliance, women are slightly worse off. However, men and women appear to have fairly similar experiences with respect to depth of violation.

This descriptive analysis has provided some useful insights in terms of trends in the key variables of interest (i.e., employment, real hourly wages, weekly hours worked, contract coverage and minimum wage violation) between the pre- and post-law periods. However, descriptive statistics cannot establish whether these shifts are caused by the sectoral minimum wages or by other factors. As such, the following section (section 5) employs the regression models described in section 3 to directly isolate the impact of minimum wages on employment, real hourly wages, weekly hours worked and written contract coverage.

5. Regression Results

This section provides the regression results for the impact of sectoral minimum wages on the probability of employment, real hourly wages, weekly hours worked and the probability of holding a written contract for retail workers and farmworkers. The results for retail workers are presented first (subsection 5.1), which is followed by the findings for farmworkers (subsection 5.2).

5.1 Retail Workers

To establish if minimum wages led to changes in employment among workers in the retail sector (and whether there are significant differences in the impact on employment between male and female retail workers), specifications 2(a) and 2(b) were used. The results are reported in **table 14**. The dependent variable is a dummy variable for employed (equals 1 if employed in retail and equals 0 otherwise) and a probit regression is used to account for the binary nature of the dependent variable. The sample includes individuals who are employed or seeking work, aged 15-65 and who have attained a matric or less. As described in section 3, specification 2(a) reflects the double DID model, whereby regressions are run on female-only samples (indicated by F) and male-only samples (indicated by M). Specification 2(b) represents the triple DID model, which includes both men and women (indicated by All). Since the coefficients of probit regressions are not easily interpretable, marginal effects are estimated and reported (indicated by _m). It is clear from **table 14** that sectoral minimum wages had no significant effect on employment for male or female retail workers. Neither specification suggests that there were any significant shifts in employment between the pre- and post-law periods.

Table 15 reports the results for changes in real hourly wages between the pre- and post-law periods. Both specifications 1(a and b) and 2(a and b) are used. The dependent variable is the log of real hourly wages. The sample includes individuals aged 15-65, who are employed and work full-time (≥27 hours). Specifications 1(a) and 1(b) include all those in the retail sector and the retail control group, while specifications 2(a) and 2(b) include only those in the retail sector.

The coefficient on *Retail* in Specification 1(a) (columns 1 and 2) suggests that both male and female retail workers earn less than their control counterparts (22.5% and 13.4% less respectively), regardless of the period. There are no significant effects on wages earned as result of minimum wage laws for both male and female retail workers using specification 1(a). In contrast, specification 1(b) (column 3) suggests that real hourly wages for women in the retail sector increased by 4.9% (–3.9% + 8.8%) relative to those in the control group due to sectoral minimum wages. Although, this result is only significant at the 10% level. Further, female retail workers' wages improved by 8.8% relative to male retail workers in the post-law period. However, *POST*Retail*, is not significant.

Table 14: Employment Regression Results (Retail) – With Controls

Independent Variables	1 2(a) F	2 2(a) F_m	3 2(a) M	4 2(a) M_m	5 2(a) All	6 2(a) All_m
POST	-0.0365	-0.00628	0.0147	0.00212	0.00350	0.000548
	(0.22)	(0.004)	(0.02)	(0.003)	(0.02)	(0.003)
Wage Gap	0.0736	0.0127	0.0112	0.00162	0.0153	0.00240
	(0.04)	(0.008)	(0.04)	(0.006)	(0.04)	(0.007)
Female					0.112***	0.0175***
					(0.02)	(0.004)
POST*Wage Gap	-0.0590	-0.0101	0.000290	0.0000419	0.00304	0.000475
	(0.05)	(0.009)	(0.05)	(0.007)	(0.05)	(0.007)
POST*Female					-0.0237	-0.00372
					(0.03)	(0.004)
Wage Gap* Female					0.0433	0.00678
					(0.05)	(0.008)
POST*Wage Gap* Female					-0.0555	-0.00869
					(0.06)	(0.009)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.374***		-1.073***		-1.159***	
	(0.13)		(0.11)		(0.09)	
Observations	72284	72284	96990	96990	169274	169274

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for employment (=1 if employed in retail and =0 otherwise). 2. The sample consists of individuals who are employed or seeking work, aged 15-65 and who have attained a matric or less. 3. Specification 1(a) includes either all female retail workers and the female control group or all male retail workers and the male control group, while specification 1(b) includes all those in the retail sector and the control group. 4. Specifications 2(a) and 2(b) only include those in the retail sector. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. _m refers to marginal effects – these are used for the interpretation of the results. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, marital status and household headship.
Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 15: Log Real Hourly Wages Regression Results (Retail) – With Controls

Independent Variables	1 1(a) F	2 1(a) M	3 1(b) All	4 2(a) F	5 2(a) M	6 2(b) All
POST	0.022	0.094***	0.090***	0.030	0.039	0.028
	(0.025)	(0.014)	(0.014)	(0.026)	(0.024)	(0.024)
Retail	-0.134***	-0.225***	-0.240***			
	(0.031)	(0.024)	(0.024)			
Female			-0.320***			-0.175***
			(0.023)			(0.030)
POST*Retail	0.045	-0.039	-0.039			
	(0.035)	(0.028)	(0.028)			
POST*Female			-0.057**			0.018
			(0.028)			(0.035)
Retail*Female			0.122***			
			(0.037)			
POST*Retail*Female			0.088*			
			(0.045)			
Wage Gap				-0.391***	-0.462***	-0.471***
				(0.047)	(0.051)	(0.051)
POST*Wage Gap				0.038	0.144**	0.158**
				(0.054)	(0.062)	(0.062)
Wage Gap*Female						0.083
						(0.066)
POST*Wage Gap*Female						-0.133*
						(0.077)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.441***	0.868***	0.863***	0.389**	0.495***	0.480***
	(0.110)	(0.064)	(0.056)	(0.169)	(0.159)	(0.115)
Observations	10,677	24,784	35,461	5,046	4,806	9,852
R-squared	0.382	0.329	0.357	0.502	0.493	0.495

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample includes individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female retail workers and the female retail control group or all male retail workers and the male retail control group, while specification 1(b) includes all those in the retail sector and the control group. 4. Specification 2(a) and 2(b) only include those in the retail sector. 5. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status, and contract type.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Specification 2(a) (column 4) reveals that real hourly wages improved more for male retail workers from districts with a larger wage gap following the introduction of minimum wages in the post-law period. The coefficient on *Post*Wage Gap* indicates that a 1 unit increase in the wage gap results in a 14.4% increase in wages. No significant impact is found on female retail workers using specification 2(a). According to specification 2(b) (column 6), the wages of both male and female retail workers from districts with a larger wage gap experience rise to a greater extent in the post-law period. However, wage increases are higher for men. The coefficient on *Post*Wage Gap* (male DID term) reveals that a 1 unit increase in the wage gap results in a 15.8% increase in male retail workers' wages versus a 2.5% (15.8% – 13.3%) increase in female retail workers' wages.

Quantile regressions are also employed for the log wage regressions to assess how the shift in wages earned between the pre- and post-law periods varies across the income distribution. These results can be found in **Appendix A.2** (**tables 39-44**). The quantile regression approach was applied to specifications 1(a) and 1(b) and results are shown for the 5th, 10th, 25th, 50th (median), 75th, 90th and 95th percentiles.

According to **table 40** (specification 1(a), female and with controls), a significant and positive effect on wages earned in the post-law period can only be found for female retail workers at the 25th percentile (column 3). These workers' wages increase by 7.4% relative to their control counterparts following the introduction of minimum wages. Nevertheless, this coefficient is only significant at the 10% level.

Weakly significant (at the 10% level) and marginally negative effects are observed for male retail worker in the 50th and 75th percentiles using the same specification (**table 42** – columns 4 and 5). The real hourly wages of male retail workers in 50th and 75th percentiles decrease by 5.1% and 6.7% compared to men in the retail control group between the pre- and post-law periods.

Using specification 1(b) with controls (**table 44** – columns 4 and 5), similar results are detected for the male retail workers in the 50th and 75th percentiles. Whereas positive and significant findings are observed on the female DID term (*Post*Retail*Female*) for those in the 25th (column 3), 50th (column 4) and 75th (column 5) percentiles – with women in the 50th percentile reaping the highest gains in wages (albeit marginally so) between the pre- and post-law periods. The median female retail worker experiences a 7% (-5.6% + 12.6%) increase in real hourly wages compared to those in the control group following the implementation of minimum wages. Further, the wages of the median female retail worker improved by 12.6% relative their male counterparts.

To establish whether minimum wages led to changes in weekly hours worked among retail workers, specifications 1(a and b) and 2(a and b) are used. Results are reported in **table 16**. The dependent variable is weekly hours worked. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). Specifications 1(a) and 1(b) include all those in the retail sector and the retail control group, while specifications 2(a) and 2(b) only include those in the retail sector.

Specifications 1(a) and 1(b) indicate that the weekly hours worked by men and women in the retail control group are significantly lower on average in the post-law period. However, the working hours of men in the retail control group reduced to a greater extent relative to their female counterparts (2.6 hours versus 1.2 hours). According to specifications 1(a) (columns 1 and 2) and specification 1(b) (column 3), retail workers work more hours per week compared to the control group in the pre-law period. Using specification 1(a), male and female retail workers work 1.1 and 2.6 hours more than their male and female control counterparts respectively. Similar results can be observed using specification 1(b).

For male retail workers, specification 1(a) (column 1) indicates that their weekly hours worked increased by 1.67 hours relative to men in the retail control group in the post-law period. Specification 1(b) (column 3) shows the same result. The *Post*Retail* coefficient is insignificant for female retail workers using specification 1(a). According to specification 1(b), female retail workers experience a significant decline of 0.33 (1.671 – 1.998) hours relative to the control group in the post-law period. Further, weekly hours worked for female retail workers reduced by 2 hours relative to male retail workers. According to specifications 2(a) and 2(b), no significant differences in weekly hours worked between district councils (with varying wage gaps) are detected in the post-law period for either male or female retail workers.

Table 17a reports the results for changes in written contract coverage between the pre- and post-law period using specification 1. The dependent variable is a dummy variable for the probability of having a written contract (which equals 1 if a person is employed with a written contract and equals 0 otherwise). Once again, a probit regression is used to account for the binary dependent variable. The sample includes those aged 15-65, who are employed and work full-time (≥27 hours). Specifications 1(a) and 1(b) include all those in the retail sector and the retail control group. As with the employment regression, marginal effects are estimated and reported (indicated by _m).

Specifications 1(a) and 1(b) indicate that the proportion of men and women in the retail control group with a written contract significantly improved in the post-law period, although women experienced marginally higher increases. No significant effect on contract coverage (as a result of minimum wages) is found for female retail workers using specifications 1(a) or 1(b). In contrast, specification 1(a) (column 4) reports that the probability of having a written contract for male retail workers increased by 5 percentage points (pp) compared to men in the control group following the introduction of minimum wages. Specification 1(b) indicates approximately the same result.

Table 17b depicts the results for changes in written contract coverage between the pre- and post-law period using specification 2. The dependent variable is a dummy variable for the probability of having a written contract (which =1 if person is employed with a written contract and =0 otherwise). A probit regression is employed. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). Specifications 2(a) and 2(b) include only include those in the retail sector. Marginal effects are estimated and reported (indicated by _m).

No significant effects are found on the coefficient for *Post*Wage Gap* for male or female retail workers using specification 2(a). Further, no significant effect is detected on the coefficient for *Post*Wage Gap* (male DID term) using specification 2(b) (column 6) for male retail workers. In contrast, contract coverage reduced slightly among female retail workers in district councils with a greater wage gap. *Post*Wage Gap + Post*Wage Gap*Female* (female DID term) suggests that a 1 unit increase in the wage gap leads to a 2.3pp (2.1pp – 4.4pp) decrease in the probability of having a written contract among female retail workers. Although, as noted, so significant effect is found on the *POST*Wage* Gap coefficient.

Table 16: Weekly Hours Worked Regression Results (Retail) – With Controls

	1	2	3	4	5	6
Independent Variables	1(a) F	1(a) M	1(b) All	2(a) F	2(a) M	2(b) All
POST	-1.245***	-2.592***	-2.572***	-1.149***	-0.723**	-0.641*
	(0.412)	(0.237)	(0.238)	(0.362)	(0.365)	(0.360)
Retail	2.556***	1.071***	1.153***			
	(0.453)	(0.377)	(0.366)			
Female			-1.682***			-0.506
			(0.393)			(0.426)
POST*Retail	-0.293	1.668***	1.671***			
	(0.528)	(0.431)	(0.430)			
POST*Female			1.243***			-0.620
			(0.471)			(0.493)
Retail*Female			1.266**			
			(0.560)			
POST*Retail*Female			-1.998***			
			(0.680)			
Wage Gap				2.499***	2.522***	2.509***
				(0.690)	(0.736)	(0.733)
POST*Wage Gap				0.276	0.276	0.235
				(0.830)	(0.906)	(0.902)
Wage Gap*Female						0.027
						(0.996)
POST*Wage Gap*Female						0.124
						(1.229)
Other Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Constant	53.064***	50.568***	51.378***	54.032***	52.704***	53.222***
	(2.020)	(1.054)	(0.878)	(2.640)	(2.182)	(1.637)
Observations	12,613	26,459	39,072	6,908	6,630	13,538
R-squared	0.062	0.036	0.043	0.104	0.086	0.096

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is weekly hours worked 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female retail workers and the female retail control group or all male retail workers and the male retail control group, while specification 1(b) includes all those in the retail sector and the control group. 4. Specification 2(a) and 2(b) only include those in the retail sector. 5. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 17a: Contract Coverage Regression Results (Retail) – With Controls

Independent Variables	1 1(a) F	2 1(a) F_m	3 1(a) M	4 1(a) M_m	5 1(b) All	6 1(b) All_m
POST	0.331***	0.107***	0.310***	0.101***	0.311***	0.101***
	(6.65)	(6.71)	(10.62)	(10.73)	(10.66)	(10.73)
Retail	-0.0991	-0.0320	-0.132**	-0.0428**	-0.135**	-0.0439**
	(-1.72)	(-1.72)	(-2.88)	(-2.89)	(-3.06)	(-3.07)
Female					-0.0287	-0.00932
					(-0.63)	(-0.63)
POST*Retail	0.0941	0.0304	0.166**	0.0540**	0.168**	0.0546**
	(1.37)	(1.37)	(3.07)	(3.07)	(3.12)	(3.12)
POST*Female					0.0165	0.00536
					(0.29)	(0.29)
Retail* Female					0.0344	0.0112
					(0.50)	(0.50)
POST*Retail* Female					-0.0685	-0.0223
					(0.79)	(0.79)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.923***		-2.086***		-2.038***	
	(-8.28)		(-13.86)		(-16.26)	
Observations	12804	12804	26856	26856	39660	39660

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for contract coverage (=1 if employed with a written contract and =0 otherwise). 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female retail workers and the female retail control group or all male retail workers and the male retail control group, while specification 1(b) includes all those in the retail sector and the control group. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. Robust standard errors clustered by district councils are displayed in parentheses. 6. Individual controls include race, age, education, household headship, marital status, trade union membership public/private sector status and formal/informal sector status.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 17b: Contract Coverage (Retail) – With Controls						
	1	2	3	4	5	6
Independent Variables	2(a) F	2(a) F_m	2(a) M	2(a) M_m	2(b) All	2(b) All_m
POST	0.492***	0.149***	0.354***	0.105***	0.349***	0.104***
	(25.66)	(26.47)	(19.58)	(19.94)	(19.40)	(19.64)
Wage Gap	-0.296***	-0.0894***	-0.322***	-0.0952***	-0.339***	-0.101***
	(-7.82)	(-7.87)	(-9.26)	(-9.30)	(-9.77)	(-9.80)
Female					-0.0862***	-0.0258***
					(-4.50)	(-4.50)
POST*Wage Gap	-0.0853	-0.0258	0.0683	0.0202	0.0702	0.0210
	(-1.91)	(-1.91)	(1.66)	(1.66)	(1.72)	(1.72)
POST*Female					0.151***	0.0450***
					(6.74)	(6.74)
Wage Gap* Female					0.0394	0.0118
					(0.99)	(0.99)
POST*Wage Gap* Female					-0.148**	-0.0442**
					(-3.01)	(-3.01)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.769***		-1.928***		-1.831***	
	(-16.47)		(-22.17)		(125.62)	
Observations	63127	63127	91201	91201	154328	154328

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for contract coverage (=1 if employed with a written contract and =0 otherwise). 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specifications 2(a) and 2(b) only include those in the retail sector. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. Robust standard errors clustered by district councils are shown in parentheses. 5. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status and formal/informal sector status.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

5.2 Farmworkers

The regression approaches used (and described above) for assessing the changes in employment, real hourly wages, weekly hours worked, and written contract coverage of retail workers are also employed for the farmworkers' regressions presented below (i.e., tables 18-22). However, to account for seasonality, a further control is included for surveys conducted in September.

Table 18 displays the results for shifts in employment among farmworkers between the pre- and post-law periods. The dependent variable was a dummy variable for employed (equals 1 if employed in agriculture and equals 0 otherwise). The results of **table 18** reflect those found for the retail sector (table 13) – minimum wages do not appear to have significantly impacted the employment levels of farmworkers.

The impact of sectoral minimum wages on the real hourly earnings of farmworkers is reported in **table 19**. Specifications 1(a) and 1(b) suggest that real hourly wages for men and women in the farmworkers control group improved in the post-law period. Nevertheless, men experience greater increases – 24% compared to 14.9% for women.

According to specification 1(a) (column 1), female farmworkers' wages increased by 13.8% compared to women in the control group following the introduction of minimum wages. No significant effect is found on male farmworkers' wages using specification 1(a). Specification 1(b) (column 3) reveals that female farmworkers' real hourly wages improved by 14.4% (10.8% + 3.6%) relative to individuals in the control group. Further, the real hourly wages of female farmworkers increased by 10.8% compared to male farmworkers due to minimum wages. However, the value for *POST*Farmworkers* (male DID term) is not statistically significant.

Using specification 2(a) (columns 4 and 5), both male and female farmworkers in district councils with a larger wage gap experience greater increases in real hourly wages in the post-law period. In addition, the wage improvements appear to be marginally higher for women. The coefficient on *Post*Wage* Gap suggests that a 1 unit increase in the wage gap leads to a 32.4% and 31.9% increase in real hourly wages for female and male farmworkers respectively. For specification 2(b) (column 6), male farmworkers in districts with a greater wage gap experience greater rises in wages (similar in magnitude to the effects observed using specification 2(a)); however, no significant effect is found for female farmworkers using this specification.

Once again, quantile regressions were employed for the farmworkers wage regressions to determine how changes in wages earned between the pre- and post-law periods differed across the income distribution. The results can be found in **Appendix A.2** (**tables 45-50**). The quantile regressions were applied to specifications 1(a) and 1(b), with results shown for the 5th, 10th, 25th, 50th (median), 75th, 90th and 95th percentiles.

According to specification 1(a) (with controls) for female farmworkers (**table 46**), the introduction of minimum wage laws led to significant improvements in real hourly wages among the 10th (column 2), 50th (column 4), 75th (column 5), 90th (column 6) and 95th (column 6) percentiles. The 95th percentile experienced the greatest gains, whereby their wages increased by

24.6% relative to the control group between the pre- and post-law periods. Those in the 10th percentile received the lowest improvements, with their wage rising by 12.2% compared to the control group.

For male farmworkers, according to specification 1(a) (**table 48** – with controls), only the 25th and 50th percentiles obtain statistically significant albeit marginal improvements in their hourly wages in the post-law period (5% and 6 % increase respectively). However, the coefficient for the 25th percentile is only significant at the 10% level.

According to specification 1(b) (**table 50** – with controls), male farmworkers at the 50th and 75th percentiles experience small and weakly significant (10% level) improvements in wages earned (around a 5% increase) relative to control group between the pre- and post-law periods. While female farmworkers in the 50th, 90th and 95th percentiles obtain substantial increases in real hourly wages compared to the control group (although the results for the 50th and 95th percentiles are only significant at the 10% level). As found with specification 1(a), female farmworkers in the 95th percentile experience the greatest improvements, with their real hourly wages increasing by 25.8% (4.4 + 21.4) relative to the control group and by 21.4% compared to their male counterparts. However, *POST*Retail*, is not significant.

Table 20 reports the findings for the effects of minimum wages on weekly hours worked among farmworkers. According to specification 1(a) (column 2) male farmworkers have higher weekly hours compared to men in the control group in the pre-law period (5.37 hours more on average). However, the implementation of minimum wages decreased hours worked by 2.24 hours for male farmworkers relative to men in the control group. Specification 1(b) (column 3) suggests that weekly hours worked for male farmworkers reduced by 2.21 hours compared to the control group, while female farmworkers' weekly hours worked improved by 0.15 (-2.21 + 2.36) hours relative to the control group in the post-law period. Further, the weekly hours worked by female farmworkers increased by 2.36 in comparison to male farmworkers.

Specifications 2(a) (column 4) and 2(b) (column 6) indicate that the weekly hours worked by female farmworkers decreased to a greater extent in districts with larger wage gaps. According to specification 2(a), the coefficient on *Post*Wage Gap* indicates that a 1 unit increase in the wage gap leads to a 3 hour decrease in weekly hours worked among female farmworkers in the post-law period. Specification 2(b) finds a similar albeit slightly smaller effect, whereby a 1 unit increase results in a 2.87 (0.09 – 2.96) decrease in hours worked. However, these coefficients are only significant at the 10% level and *Post*Wage Gap* (male DID term for specification 2(b)) is not significant. No significant effect was found on male farmworkers using specification 2(a) and as noted, specification 2(b).

Table 18: Employment (Farmworkers) – With Controls

Independent Variables	1 2(a) F	2 2(a) F_m	3 2(a) M	4 1(a) M_m	5 2(a) All	6 2(a) All_m
POST	0.118	0.00433	-0.0758	-0.00335	-0.0776	-0.00324
	(0.09)	(0.003)	(0.09)	(0.004)	(0.08)	(0.004)
Wage Gap	6.500***	0.238***	5.574***	0.246***	5.652***	0.236***
	(0.34)	(0.008)	(0.36)	(0.008)	(0.36)	(0.009)
Female					-0.651***	-0.0272***
					(0.08)	(0.004)
POST*Wage Gap	0.0352	0.00129	0.393	0.0173	0.377	0.0157
	(0.26)	(0.001)	(0.29)	(0.013)	(0.29)	(0.012)
POST*Female					0.215**	0.00899**
					(0.08)	(0.003)
Wage Gap* Female					0.633*	0.0264*
					(0.27)	(0.011)
POST*Wage Gap* Female					-0.320	-0.0134
					(0.26)	(0.011)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.323***		0.338		0.160	
	(0.37)		(0.24)		(0.23)	
Observations	64861	64861	89050	89050	153911	153911

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for employment (=1 if employed in retail and =0 otherwise). 2. The sample consists of individuals who are employed or seeking work, aged 15-65 and who have attained a matric or less. 3. Specification 1(a) includes either all female agricultural workers and the female control group or all male agricultural workers and the male control group, while specification 1(b) includes all those in the agricultural sector and the control group. 4. Specifications 2(a) and 2(b) only include those in the agricultural sector. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. _m refers to marginal effects – these are used for the interpretation of the results. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, marital status and household headship. 8. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 19: Log Real Hourly Wages (Farmworkers) – With Controls

	1	2	3	4	5	6
Independent Variables	1(a) F	1(a) M	1(b) All	2(a) F	2(a) M	2(b) All
POST	0.149***	0.240***	0.243***	0.168***	0.151***	0.152***
	(0.047)	(0.027)	(0.027)	(0.038)	(0.030)	(0.030)
Farmworkers	-0.395***	-0.587***	-0.585***			
	(0.041)	(0.025)	(0.025)			
Female			-0.229***			-0.004
			(0.043)			(0.038)
POST*Farmworkers	0.138***	0.040	0.036			
	(0.050)	(0.030)	(0.030)			
POST*Female			-0.098*			0.012
			(0.051)			(0.043)
Farmworkers*Female			0.189***			
			(0.045)			
POST*Farmworkers*Female			0.108**			
			(0.055)			
Wage Gap				-0.725***	-0.629***	-0.633***
				(0.077)	(0.066)	(0.065)
POST*Wage Gap				0.324***	0.319***	0.315***
				(0.076)	(0.064)	(0.064)
Wage Gap*Female						-0.086
						(0.078)
POST*Wage Gap*Female						0.015
						(0.088)
Other Control Included	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.560***	1.166***	1.278***	1.762***	0.971***	1.163***
	(0.259)	(0.118)	(0.112)	(0.283)	(0.123)	(0.118)
Observations	9,501	24,439	33,940	7,447	18,163	25,610
R-squared	0.322	0.338	0.338	0.359	0.327	0.333

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female agricultural workers and the female agricultural control group or all male agricultural workers and the male agricultural control group, while specification 1(b) includes all those in the agricultural sector and the control group. 4. Specifications 2(a) and 2(b) only include those in the retail sector. 5. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type. 8. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

The results for the impact of minimum wages on written contract coverage, using specification 1, are reported in **table 21a**. Specifications 1(a) and 1(b) indicate that contract coverage significantly increased for both men and women in the farmworkers control group between the pre- and post-law periods. However, effects are slightly higher for women (14.2pp increase) relative to men (12.9pp increase) according to specification 1(a). Specification 1(b) reveals similar effects. According to specification 1(a) (column 4), the probability of holding a written contract increased by 6.53pp for male farmworkers relative to men in the control group following the introduction of minimum wages. A similar result is found using specification 1(b). No significant effects are detected for female farmworkers using either specification.

Table 21b reports the results for the impact of minimum wage legislation on written contract coverage using specification 2. According to both specification 2(a) and 2(b) (columns 4 and 6), the probability of having a written contract improved more for male farmworkers in districts with a larger wage gap. A 1 unit increase in the wage gap results in an 8pp increase in the probability of having a written contract for male farmworkers in districts with a greater wage gap between the pre- and post-law periods. No significant effect is detected for female farmworkers using specification 2(a). However, according to specification 2(b), contract coverage increased more for female farmworkers in districts with a larger wage gap, as well as improved to a greater extent relative to male farmworkers. A 1 unit increase in the wage gap leads to a 16pp (8pp + 8pp) increase in the probability of having a written contract among female farmworkers following the introduction of minimum wages.

Table 20: Weekly Hours Worked (Farmworkers) – With Controls

Independent Variables	1 1(a) F	2 1(a) M	3 1(b) All	4 2(a) F	5 2(a) M	6 2(b) All
POST	-1.117*	0.333	0.256	-0.210	-2.034***	-2.099***
	(0.629)	(0.428)	(0.426)	(0.566)	(0.517)	(0.522)
Farmworkers	0.412	5.373***	5.385***			
	(0.568)	(0.405)	(0.405)			
Female			1.158**			-3.764***
			(0.554)			(0.685)
POST*Farmworkers	0.159	-2.238***	-2.209***			
	(0.700)	(0.506)	(0.504)			
POST*Female			-1.227*			2.374***
			(0.721)			(0.694)
Farmworkers*Female			-5.000***			
			(0.643)			
POST*Farmworkers*Female			2.355***			
			(0.825)			
Wage Gap				5.326***	4.200***	4.337***
				(1.408)	(1.127)	(1.127)
POST*Wage Gap				-3.008*	0.064	0.093
				(1.459)	(1.109)	(1.119)
Wage Gap*Female						0.472
						(1.522)
POST*Wage Gap*Female						-2.965*
						(1.672)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Constant	43.810***	52.410***	50.388***	39.877***	54.987***	52.783***
	(2.227)	(1.948)	(1.773)	(2.239)	(2.088)	(1.936)
Observations	9,680	24,897	34,577	7,592	18,552	26,144
R-squared	0.030	0.053	0.051	0.037	0.039	0.055

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is weekly hours worked. 2. The sample consists of individuals who are employed, aged 15-65 and work full-time (≥27 hours). 3. Specification 1(a) includes either all female agricultural workers and the female agricultural control group or all male agricultural workers and the male agricultural control group, while specification 1(b) includes all those in the agricultural sector and the control group. 4. Specifications 2(a) and 2(b) only include those in the agricultural sector. 5. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type. 8. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 21a: Contract Coverage (Farmworkers) – With Controls						
Independent Variables	1 1(a) F	2 1(a) F_m	3 1(a) M	4 1(a) M_m	5 1(b) All	6 1(b) All_m
POST	0.405***	0.142***	0.381***	0.129***	0.382***	0.131***
	(4.32)	(4.44)	(7.41)	(7.46)	(7.48)	(7.52)
Farmworkers	0.376***	0.131***	-0.162**	0.0549**	-0.165**	0.0565**
	(-5.00)	(-5.04)	(-3.05)	(-3.07)	(-3.12)	(-3.14)
Female					0.208*	0.0714*
					(2.34)	(2.33)
POST*Farmworkers	-0.0186	-0.00652	0.192**	0.0653**	0.190**	0.0651**
	(-0.20)	(-0.20)	(2.86)	(2.88)	(2.84)	(2.86)
POST*Female					0.0179	0.00614
					(0.17)	(0.17)
Farmworkers* Female					-0.212*	-0.0725*
					(-2.42)	(-2.42)
POST*Farmworkers* Female					-0.195	-0.0667
					(-1.74)	(-1.74)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-2.235***		-2.355***		-2.360***	
	(-3.75)		(-9.68)		(-10.59)	
Observations	9722	9722	25117	25117	34839	34839

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for contract coverage (=1 if employed with a written contract and =0 otherwise). 2. The sample includes individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female agricultural workers and the female agricultural control group or all male agricultural workers and the male agricultural control group, while specification 1(b) includes all those in the agricultural sector and the control group. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. Robust standard errors clustered by district councils are displayed in parentheses. 6. Individual controls include race, age, education, household headship, marital status, public/private sector status, formal/informal sector status and trade union membership. 7. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 21b: Contract Coverage (Farmworkers) – With Controls

Independent Variables	1 2(a) F	2 2(a) F_m	3 2(a) M	4 1(a) M_m	5 2(a) All	6 2(a) All_m
POST	0.479***	0.146***	0.417***	0.124***	0.418***	0.125***
	(16.06)	(16.45)	(17.26)	(17.54)	(17.41)	(17.68)
Wage Gap	-0.376***	-0.114***	-0.396***	-0.118***	-0.415***	-0.125***
	(-8.33)	(-8.42)	(-10.56)	(-10.68)	(-11.16)	(-11.29)
Female					-0.0955***	-0.0287***
					(-3.84)	(-3.84)
POST*Wage Gap	-0.0108	-0.00328	0.258***	0.0767***	0.262***	0.0787***
	(-0.21)	(-0.21)	(5.99)	(6.00)	(6.12)	(6.13)
POST*Female					0.0658*	0.0198*
					(2.37)	(2.37)
Wage Gap* Female					0.0229	0.00689
					(0.53)	(0.53)
POST*Wage Gap* Female					0.267***	0.0803***
					(-5.10)	(-5.10)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.764***		-2.026***		-1.889***	
	(-16.69)		(-21.55)		(-25.31)	
Observations	56216	56216	83695	83695	139911	139911

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for contract coverage (=1 if employed with a written contract and =0 otherwise). 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specifications 2(a) and 2(b) only include those in the agricultural sector. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. Robust standard errors clustered by district councils are displayed in parentheses. 6. Individual controls include race, age, education, household headship, marital status, public/private sector status, formal/informal sector status and trade union membership. 7. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

6. Discussion

Although the descriptive statistics (**figure 1**) indicate an increasing trend in employment for both male and female retail workers between the pre- and post-law periods, the regression results (**table 14**) suggest that no significant shifts in employment were experienced by men or women in this sector. Similarly, while the descriptive statistics for farmworkers (**figure 5**) show decreasing employment trends for both men and women, the regression results (**table 18**) reveal that sectoral minimum wages did not lead to significant employment losses among male or female farmworkers.

The lack of a significant effect on employment for the retail sector reflects the findings of Bhorat et al. (2013a), who suggest that the absence of a significant impact on employment may be explained by the fact that capital substitution of labour is more limited for service sectors. Further, the introduction of minimum wage laws in the retail sector seems to have resulted in a significant reduction in the hours worked for female employees. In other words, to manage the higher labour costs associated with the minimum wage bills, employers appear to have reduced the working hours of female retail workers rather than laying off these workers. Additionally, minimum wage non-compliance stands between 30-40% for both men and women, which also likely contributes to the lack of a significant effect on employment for retail workers.

In contrast, Bhorat et al. (2014) found that sectoral minimum wages resulted in small but significant employment losses among farmworkers. Interestingly, Bhorat et al. (2014) note that part-time farmworkers accounted for most of these job losses. It is important to reiterate that the analysis conducted by Bhorat et al. (2014) was on the agricultural sector as a whole (men and women were grouped together) and thus cannot tell us whether the significant employment losses hold when the sample is separated into male- and female-only groups. Another point worth noting is that non-compliance rates are shockingly high for the agricultural sector – with around 69% of male and 74% of female farmworkers receiving wages below the minimum wage. High non-compliance rates are very likely a substantial contributing factor to the lack of a significant effect on employment among farmworkers between the pre- and post-law periods. Ranchhod and Bassier (2017) also found no evidence of statistically significant employment losses amongst agricultural workers following the 52% increase in the sector's minimum wages in 2013. These authors highlight that wage gains were largely concentrated amongst those who had relatively high wages to begin with and argue that high non-compliance rates are likely a significant driver of the limited employment impacts (Ranchhod & Bassier, 2017).

According to specification 1(b), women in the retail and agricultural sectors experience significant increases in real hourly wages relative to their control and male counterparts following the introduction of minimum wages (although this effect is only significant at the 10% level for female retail workers). In contrast, no significant effect is detected for men in either sector using this specification. Both male and female retail workers with a larger wage gap experience higher wage increases in the post-law period – nevertheless, men enjoy greater improvements than women (specification 2). This finding is reflected in the descriptive statistics (**tables 2 and 4**) – which indicate that both male and female retail workers achieve gains in real hourly wages

between the pre- and post-law periods; however, men appear to experience slightly greater wage increases. In fact, the mean unadjusted gender wage gap for retail workers worsened slightly (from 0.84 to 0.82) in the post-law period (**figure 3**). This shift in the gender wage gap appears to be driven by those at the upper end of the earnings distribution.

Specification 2(a) indicates that both male and female farmworkers in districts with a larger wage gap experience greater increases in their wages between the pre- and post-law periods; however, women experience slightly higher increases. Specification 2(b) detects the same result for male farmworkers in districts with a larger wage gap, while no significant impact is found for female farmworkers using this specification. Nevertheless, the descriptive statistics suggest that female farmworkers experience greater increases in real hourly wages (on average) compared to male farmworkers between the pre- and post-law periods (**tables 8 and 10**). Additionally, the unadjusted gender wage gap reduced significantly among farmworkers between the two periods (from 0.88 to 0.95) (**figure 7**). The greatest improvements in the gender wage gap seem to be among those at the upper end of the earnings distribution. This may be explained by the fact that these individuals had the worst gender wage gap to begin with – and thus, the greatest room for improvement. In contrast, those at the lower end of the earnings distribution had smaller initial gender pay gaps, with women in the 10th percentile earning approximately the same as men on average. However, despite experiencing the greatest reductions in the gender wage gap, those at the upper end of the earnings distribution maintain the worst gender pay gap (although only marginally so).

One possible explanation for the contrasts observed between the retail and agricultural sectors may be, in part, due to the differences in how sectoral minimum wages were determined. As discussed in section 3, minimum wages for retail workers were allocated according to occupation, hours worked, firm size and area. In contrast, minimum wages for farmworkers were determined only according to area. Thus, the finding that male retail workers appear to experience greater wage increases relative to female retail workers in areas with larger wage gaps (following the implementation of minimum wages) could be partially explained by occupational segregation – and that "male-dominated" occupations are assigned higher wage floors on average. While relatively equal proportions of men and women are found in sales and shop assistant positions, cashier jobs and retail drivers are dominated by women and men respectively. The wage floors mandated for retail drivers are higher on average compared to wage floors for cashiers.

In addition, when looking at minimum wage violation for sales assistants (which have the highest wage floors on average among the included retail occupations), non-compliance sits at 66% for women and 47% for men on average. Thus, discrepancies in the impact of minimum wages between men and women in retail sector may be driven in part by occupational segregation. However, the differences in pay (and rates of violation) within occupations could be indicative of the following: there may be differences in the types of employers or firms men and women work for (with women working for employers/firms that are less likely to comply with minimum wages), the same employers may treat men and women differently (and are less willing to comply with minimum wages for female workers) and there could be differences in men's and women's willingness to accept lower wages (with women more likely to accept lower wages) and/or to

speak out against their employer (with women less likely to speak out about minimum wage violation). Therefore, the combination of multiple minimum wage schedules and poor enforcement of minimum wage laws may have played a role in undermining the effectiveness of minimum wages in reducing gender pay disparities in the retail sector.

As noted, minimum wages for farmworkers varied only according to area and all those classified as "farmworkers" are engaged in very similar tasks and occupations – which tend to be assisting with growing of crops or rearing farm animals. In addition, the extremely low average wages and high rates of non-compliance for both male and female farmworkers may suggest that discrepancies in the types of employers men and women work for, how they are treated by their employers and willingness to accept lower wages are less pronounced in the agricultural sector relative to the retail sector.

While there may be other differences between the retail and agricultural sectors which explain the contrasting effects of sectoral minimum wages on the gender wage gap, setting minimum wages according to occupation for the retail sector is likely to be a significant contributing factor. This speculation is supported by the findings of Broadway and Wilkins (2017), who as discussed in section 2.4, observed that while the gender wage gap is smaller among those covered by Australia's award wage system[33], there is a penalty associated with working in a "female-dominated" occupation. Broadway and Wilkins (2017) suggest that this penalty may be a result of award-wage decisions being influenced by the "typical" wages of a given occupation – and since female-dominated occupations typically have lower wages, the award wages assigned to these occupations tend to be lower.

In terms of working hours, specification 1(b) shows that weekly hours worked declines slightly for female retail workers relative to their control counterparts between the pre- and post-law periods, while the opposite holds true for female farmworkers. However, according to specification 2(b), the weekly hours worked decline more for female farmworkers in districts with a larger wage gap. Although, this result is only significant at the 10% level and the impact for male farmworkers is insignificant. According to specifications 1(a) and 1(b), the weekly hours worked for male retail workers improves compared to their control counterparts following the introduction of minimum wages. In contrast, male farmworkers endure a significant decline in working hours (specifications 1(a) and 1(b)).

The descriptive statistics suggest that both men and women in the two sectors experience declines in weekly hours worked on average; however, these reductions were slightly smaller for women (**tables 2, 3, 8 and 9**). Further, the average weekly hours worked for women in both sectors decreased by less than the reduction observed for women in their respective control groups. However, the discrepancies were much greater between female farmworkers and their control group counterparts (**tables 2, 4, 8 and 10**).

[33] As noted in section 2.4, while Australia has a national minimum wage, most jobs have legally required minimums outlined in industrial "awards" – this is referred to as the award wage system and covers far more employees than the national minimum wage. Australia's award system has led to the establishment of several minimum wages – which are determined according to industry and/or occupation (this establishes the applicable "award"), as well as the specific tasks and duties they perform, their skill level, age and experience. In 2017, there were 122 district federal awards, each of which stipulates several minimum wages.

The descriptive statistics (**tables 3 and 5**) show that the loss in working hours for male retail workers is slightly less than the reductions in hours worked by their control counterparts. In contrast, the descriptive statistics (**tables 9 and 11**) suggest that male farmworkers experience a 4% decline in average weekly hours worked, while the average working hours of their control counterparts increases by 4%.

As noted in section 2.3, Bhorat et al. (2013) found that the weekly hours worked of retail workers declined by 1.2 hours following the introduction of minimum wages. The results in this study suggest that the reduction in working hours observed by Bhorat et al. (2013) may be driven by female retail employees. Female workers may have been slightly more susceptible to having their working hours reduced since they required on average greater wage increases per hour to meet the mandated wage floor compared to men.

The significant loss in hours worked for male farmworkers in the post-law period may be in part explained by the fact that they had very high weekly working hours (on average) prior to the introduction of minimum wages. In fact, the average hours worked in the pre-law period exceed the 45-hour limit for normal working hours – which was mandated by the 2003 sectoral determination (sectoral determination 8) for farmworkers – by about 5 or more hours. Sectoral determination 8 stipulates that "overtime must be paid at 1.5 times the employee's normal wage, or an employee may agree to receive paid time off" (Western Cape Government, n.d.). Thus, the combination of mandatory wage floors and overtime pay may have made those working overtime more likely to experience reductions in hours worked. In contrast, possibly the working hours of female farmworkers, who were not working overtime, increased slightly in the post-law period to compensate for the loss in hours initially provided by men working overtime.

No significant effect is found on written contract coverage for women in either sector using specifications 1(a) or 1(b). Whereas the probability of having a written contract for men in the retail and agricultural sectors increased following the introduction of sectoral minimum wages (specifications 1(a) and 1(b)). Contract coverage expanded more for male and female retail workers and farmworkers in districts with a larger wage gap between the pre- and post-law periods (specification 2(b)). However, the gains were slightly greater for male retail workers relative to their female counterparts, while the opposite holds true for the agricultural sector. The descriptive statistics (**tables 2, 4, 8 and 10**) suggested that the proportion of women with a written contract improved in both sectors, although these increases are marginally less than those of their male counterparts.

Lastly, minimum wage violation seems to be much more pervasive in the agricultural sector (69% and 74% of all male and female farmworkers) compared to the retail sector (34% and 35% of all male and female retail workers). While there doesn't appear to be huge discrepancies in the incidence and depth of violation between men and women in both sectors, women are slightly worse off on average for both these metrics.

7. Conclusion

This paper sought to determine whether South Africa's sectoral minimum wages (for the retail and agricultural sectors) had differential impacts on men and women in terms of wages earned, employment, hours worked, written contract coverage and compliance. Further, this paper also investigated whether minimum wages could serve as a viable policy lever for reducing gender pay gaps in the context of South Africa. Analysing the retail and agricultural sectors allowed for a comparison between the effects of a more "blanket" minimum wage (agricultural sector) to the effects of a system whereby minimum wages are determined according to various factors – such as, occupation, hours worked, firm size and area (retail sector).

Sectoral minimum wages appear to have improved the gender wage gap within the agricultural sector. However, male farmworkers have suffered reductions in their working hours, while their female counterparts have achieved slight improvements in their weekly hours worked. In contrast, male retail workers seem to have reaped greater gains in pay relative to female retail workers. Further, male retail workers experienced improvements in their weekly hours worked, while female retail workers endured reductions in their working hours.

Thus, this paper has showcased that sectoral minimum wage laws were effective at reducing gender pay discrepancies among South African farmworkers. However, among South African retail workers, sectoral minimum wages appear to have slightly worsened the gender wage gap. As discussed in section 6, these contrasting results may, in part, be explained by the sectors different minimum wage structures. However, it is important to underscore that there are likely to be other differences between the two sectors and the workers within these sectors that contribute to these contrasting findings. Nevertheless, the results of this paper in addition to those of Broadway and Wilkins (2017), provide some evidence for a more "blanket" minimum wage being better suited for promoting gender pay equity.

However, it is critical to stress that minimum wage compliance (both in terms of incidence and depth) needs to be similar between men and women in order to achieve reductions in the gender pay gap under a "blanket" minimum wage – as is the case with the agricultural sector (although women were slightly worse off).

It is also important to highlight that the findings of this paper may be specific to workers in the retail and agricultural sectors, and we cannot necessarily generalise these results to all other workers in South Africa. As such, a potential avenue for confirming the 'generalisability' of these findings could be to assess the impact of the NMW on the gender wage gap, as well as whether its' impact on employment, hours worked, and written contract coverage differed between men and women.

However, there are a few key factors to consider if one were to undertake this analysis. First, when the NMW of R20/hour was introduced in 2019, domestic workers, farmworkers and employees of the expanded public works programme were assigned slightly lower wage floors. Nevertheless, as of 2022, the wage floors of domestic workers and farmworkers were brought in line with the NMW. Since the bulk of domestic workers are women, the initially lower wage

floors allocated to this group of workers may have undermined the potential "equality-enhancing" effects (in terms of pay between men and women) of the NMW. Thus, the structure of the NMW between 2019 to 2022 somewhat resembles the structure of sectoral minimum wages for the retail sector. As a result, we may observe that gender pay gaps may have actually worsened following the implementation of the NMW (and until 2022). In contrast, from 2022 onwards, whereby a "blanket" minimum wage is provided for all workers, we could possibly observe improvements in the gender wage gap. Nevertheless, as highlighted above, these observations will depend on the incidence and depth of minimum wage compliance for men relative to women.

It is also worth emphasizing that non-compliance with sectoral minimum wages was staggeringly high (especially among farmworkers). This pattern of high non-compliance has also been found with the NMW (Bhorat et al., 2021). Although this paper revealed that the non-compliance rates are fairly similar between men and women in the two sectors analysed (with women only marginally worse off) – the overall high non-compliance rates limit the extent to which we can confidently conclude that minimum wages are effective at reducing gender pay discrepancies in the context of South Africa. The findings of this paper may change if minimum wage compliance is more rigorously monitored and enforced. The reason being that there are likely to be differences in the individuals who do and do not experience minimum wage violations, as well as differences in the type of employers who comply or do not comply with minimum wage laws. For example, if there is stricter enforcement of minimum wages, we may see a greater share of women losing their jobs or experiencing higher reductions in their hours worked relative to men.

Nevertheless, this paper does provide some proof of the potential of minimum wages to reduce gender pay gaps in South Africa, without any major adverse consequences, and appears to suggest that a more "blanket" minimum wage may be better suited to this task. However, the issue of minimum wage non-compliance in South Africa is likely hampering the degree to which minimum wages can protect vulnerable workers from unduly low pay, as well as reducing wage discrepancies between men and women. Thus, there is an urgent need to improve the monitoring and enforcement of minimum wage compliance and potentially an additional need of providing protection to women who may be particularly vulnerable to either losing their job or having their working hours diminished.

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Appendix

A.1 Extended Summary Statistics Tables

Table 22: Summary Statistics (Retail Female)

	Pre-Law Period				Post-Law Period										
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	6.46	7.23	6.52	5.76	6.51	6.24	5.96	5.64	6.11	6.21	7.71	6.98	6.78	7.68	0.09
Age	33.42	33.15	32.95	32.16	33.45	33.42	33.01	32.06	33.60	31.65	32.33	32.12	33.46	32.14	
Years of Education	10.42	10.25	10.52	10.56	10.74	10.56	10.78	11.00	10.79	10.95	10.99	11.01	10.82	11.01	
African	.56	.55	.57	.60	.58	.61	.66	.60	.66	.60	.57	.59	.66	.72	
Coloured	.19	.19	.19	.19	.21	.20	.17	.19	.18	.17	.19	.21	.18	.17	
White	.18	.1	.16	.15	.14	.12	.12	.13	.10	.17	.18	.14	.13	.08	
Indian	.07	.08	.09	.06	.07	.07	.05	.07	.05	.05	.06	.06	.03	.03	
Full Time	.90	.87	.91	.88	.90	.89	.93	.92	.92	.94	.94	.94	.94	.94	
Weekly Hours Worked	47.48	44.99	45.67	45.61	44.43	45.01	46.32	45.57	45.74	47.53	44.94	44.86	46.54	44.79	-0.36
Written Contract	.52	.46	.58	.55	.60	.63	.69	.66	.69	.68	.68	.72	.69	.69	0.15
N	550	602	595	534	532	563	506	585	567	593	591	646	651	545	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Table 23: Summary Statistics (Retail Male)

	Pre-Law Period				Post-Law Period										
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	8.62	8.23	7.24	7.01	6.89	6.97	7.75	7.31	7.74	8.09	8.89	8.07	7.83	10.49	0.23
Age	34.64	35.16	34.83	33.73	34.67	35.40	35.13	33.99	34.68	35.05	34.09	34.30	33.74	34.81	
Years of Education	9.79	9.89	10.00	10.05	9.80	10.02	10.02	10.03	10.05	9.92	10.40	10.32	10.01	9.95	
African	.63	.68	.63	.64	.66	.65	.66	.69	.66	.64	.64	.73	.71	.68	
Coloured	.11	.12	.11	.11	.13	.12	.11	.12	.11	.11	.08	.07	.11	.10	
White	.17	.18	.15	.16	.13	.13	.15	.09	.14	.15	.18	.13	.11	.16	
Indian	.09	.09	.09	.09	.09	.09	.08	.10	.08	.10	.10	.07	.06	.06	
Full Time	.95	.93	.95	.95	.95	.96	.95	.96	.97	.94	.95	.98	.97	.97	
Weekly Hours Worked	49.63	48.52	48.61	48.41	48.92	48.98	48.30	47.33	48.34	49.31	46.78	49.00	48.21	46.42	-0.63
Written Contract	.54	.49	.57	.55	.61	.66	.74	.68	.72	.69	.72	.71	.67	.76	0.16
N	559	597	585	516	539	512	507	544	604	555	645	565	595	556	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Table 24: Summary Statistics (Control Retail Female)

	Pre-Law Period				Post-Law Period										
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	6.24	5.59	5.54	5.48	5.36	5.43	5.57	5.17	6.01	4.98	5.85	5.49	6.61	6.33	-0.03
Age	35.27	35.65	35.71	36.18	35.11	36.13	35.95	36.64	36.09	36.45	36.11	35.45	35.45	35.97	
Years of Education	8.71	8.63	8.81	9.10	9.07	9.08	9.02	8.83	8.57	8.98	9.12	9.07	9.42	9.21	
African	.70	.70	.73	.72	.76	.72	.73	.84	.75	.85	.81	.78	.79	.79	
Coloured	.20	.16	.12	.14	.17	.19	.18	.10	.16	.09	.13	.13	.14	.14	
White	.05	.07	.08	.06	.03	.04	.03	.03	.06	.05	.03	.02	.05	.03	
Indian	.05	.07	.07	.08	.03	.06	.06	.02	.03	.02	.04	.06	.02	.04	
Full Time	.94	.93	.92	.95	.94	.93	.92	.95	.92	.89	.96	.94	.92	.97	
Weekly Hours Worked	46.90	45.60	45.96	46.38	45.11	44.59	46.05	44.93	46.15	45.94	45.10	44.78	44.34	43.79	-1.13
Written Contract	.41	.40	.46	.53	.51	.58	.63	.58	.57	.49	.55	.58	.61	.59	0.12
N	451	420	420	364	409	349	366	445	431	454	467	482	491	470	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Table 25: Summary Statistics (Control Retail Male)

	Pre-Law Period				Post-Law Period										
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	7.42	8.00	7.51	6.95	7.01	7.67	7.34	7.61	7.86	7.20	8.21	7.77	8.09	8.42	0.85
Age	36.09	36.59	36.34	36.40	36.37	36.90	36.43	36.19	35.62	34.76	35.48	34.81	35.31	34.12	
Years of Education	7.97	7.68	8.25	8.09	7.97	8.22	8.02	8.06	8.37	8.24	8.51	8.54	8.55	8.78	
African	.77	.77	.77	.78	.78	.80	.81	.83	.81	.82	.78	.83	.80	.85	
Coloured	.11	.12	.12	.12	.13	.12	.12	.1076	.11	.12	.12	.10	.11	.09	
White	.08	.07	.07	.07	.06	.05	.04	.04	.04	.04	.06	.04	.06	.03	
Indian	.04	.04	.04	.04	.03	.04	.03	.03	.03	.02	.04	.03	.02	.02	
Full Time	.96	.95	.96	.97	.98	.96	.97	.95	.96	.96	.95	.98	.97	.98	
Weekly Hours Worked	49.11	48.65	49.31	49.73	47.48	46.24	48.11	46.38	46.68	48.58	46.47	46.94	47.68	45.40	-1.44
Written Contract	.41	.40	.49	.48	.54	.58	.64	.58	.55	.53	.57	.53	.53	.56	0.12
N	1621	1508	1504	1349	1273	1264	1261	1443	1557	1597	1630	1720	1707	1595	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Table 26: Summary Statistics (Farmworkers Female)

	Pre-Law Period					Post-Law Period									
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	2.21	2.25	2.15	2.06	2.29	2.68	2.54	2.95	3.18	3.14	3.20	3.29	3.18	3.81	.92
Age	34.96	33.71	34.41	35	34.69	34.45	35.66	33.56	35.34	35.45	34.53	33.87	35.16	33.70	
Years of Education	4.88	5.13	5.10	5.10	5.38	5.67	5.36	5.72	5.69	5.69	6.10	6.19	6.36	6.42	
African	.75	.76	.74	.69	.68	.64	.72	.70	.75	.72	.70	.68	.72	.74	
Coloured	.24	.23	.26	.31	.31	.36	.28	.30	.25	.28	.29	.31	.28	.26	
White	.01	.01	0	0	.01	0	0	0	0	0	.01	.01	0	0	
Full Time	.95	.95	.94	.97	.95	.96	.95	.94	.92	.97	.96	.97	.97	.98	
Weekly Hours Worked	48.79	47.57	47.65	48.51	47.78	46.25	48.32	45.80	47.06	47.97	47.98	46.14	48.49	46.58	-0.88
Written Contract	.22	.30	.27	.34	.41	.39	.48	.42	.37	.44	.43	.49	.44	.60	0.14
N	608	463	679	546	588	478	597	568	573	509	615	615	616	532	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Table 27: Summary Statistics (Farmworkers Male)

	Pre-Law Period					Post-Law Period									
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	2.67	2.60	2.44	2.30	2.46	3.00	2.71	3.13	3.24	3.22	3.50	3.37	3.39	3.95	.78
Age	37.65	37.61	36.40	36.63	36.96	36.74	37.09	36.85	36.36	36.53	37.06	36.37	37.25	36.96	
Years of Education	4.57	4.56	4.83	4.62	4.86	4.85	4.75	4.75	5.36	5.09	5.10	5.40	5.49	5.33	
African	.70	.72	.7032	.71	.70	.69	.72	.75	.77	.77	.77	.77	.77	.79	
Coloured	.28	.27	.2864	.28	.29	.30	.28	.25	.22	.22	.23	.22	.22	.21	
White	.02	.01	.01	.01	.01	.01	0	0	.01	.01	0	.01	.01	0	
Full Time	.97	.96	.97	.98	.98	.98	.98	.97	.97	.97	.96	.97	.98	.98	
Weekly Hours Worked	53.08	52.07	52.78	51.82	52.09	50.28	50.85	50.52	51.18	51.40	49.73	49.91	50.98	48.21	-2.03
Written Contract	.30	.28	.29	.34	.46	.55	.57	.53	.54	.52	.45	.55	.48	.54	0.19
N	1513	1298	1473	1419	1324	1258	1322	1434	1370	1359	1467	1385	1381	1305	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Table 28: Summary Statistics (Control Farmworkers Female)

	Pre-Law Period					Post-Law Period									
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	3.85	4.04	3.55	3.94	4.05	4.01	3.49	4.47	3.82	4.36	4.40	4.55	4.55	4.87	0.39
Age	36.71	38.11	38.64	36.94	38.39	37.54	37.48	37.49	38.87	36.52	39.50	37.59	38.83	39.26	
Years of Education	5.44	4.86	5.32	5.64	5.39	5.41	5.83	6.09	5.88	5.94	6.34	6.06	6.57	5.81	
African	.75	.83	.82	.76	.73	.80	.77	.78	.75	.83	.82	.77	.83	.86	
Coloured	.25	.17	.18	.24	.27	.20	.23	.22	.25	.17	.18	.23	.17	.14	
Full Time	.91	.88	.89	.84	.88	.90	.88	.83	.81	.87	.82	.92	.84	.78	
Weekly Hours Worked	46.58	44.90	45.95	42.85	43.93	44.98	43.85	40.88	42.85	43.35	40.36	44.80	42.86	38.06	-2.40
Written Contract	.43	.32	.29	.45	.48	.52	.52	.56	.51	.60	.61	.56	.58	.64	0.17
N	166	146	154	150	150	154	172	177	191	153	196	166	173	202	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Table 29: Summary Statistics (Control Farmworkers Male)

	Pre-Law Period					Post-Law Period									
	2001, 1	2001, 2	2002, 1	2002, 2	2003, 1	2003,2	2004, 1	2004, 2	2005, 1	2005, 2	2006,1	2006, 2	2007,1	2007, 2	Av Diff
Real Hourly Wage	4.18	4.53	4.06	3.92	4.35	4.66	4.81	5.23	5.06	4.87	6.32	6.47	5.99	6.27	1.31
Age	37.79	36.85	38.82	37.53	36.41	36.96	36.40	34.44	36.33	34.90	36.72	36.24	35.76	34.73	
Years of Education	5.12	5.00	5.14	5.24	5.28	5.52	6.01	5.67	6.12	5.24	6.33	6.23	5.73	5.89	
African	.87	.89	.88	.85	.88	.89	.89	.88	.87	.87	.88	.86	.88	.91	
Coloured	.13	.11	.12	.15	.12	.14	.11	.12	.13	.13	.12	.14	.12	.09	
Full Time	.91	.85	.87	.87	.94	.92	.94	.91	.92	.92	.94	.92	.94	.94	
Weekly Hours Worked	45.24	42.26	43.60	43.92	47.87	45.94	47.74	44.74	48.16	47.84	47.81	43.73	45.51	44.21	1.61
Written Contract	.20	.20	.24	.29	.39	.44	.51	.44	.45	.39	.53	.47	.49	.48	0.20
N	663	565	681	614	333	353	357	426	426	392	429	494	485	537	

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

A.2 Employment (Absolute Values and Percentage Changes)

Figure 9: Retail Male and Female Average Employment (Absolute Values and Percentage Changes)

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: 1. The vertical red line reflects the period in which the sectoral minimum wage for retail workers was instituted. 2. The x-axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2). 3. The left y-axis represents the total number of men or women employed in the retail sector in each wave and the right y-axis represents the percentage change in men or women employed in the retail sector between the previous wave and the current wave.

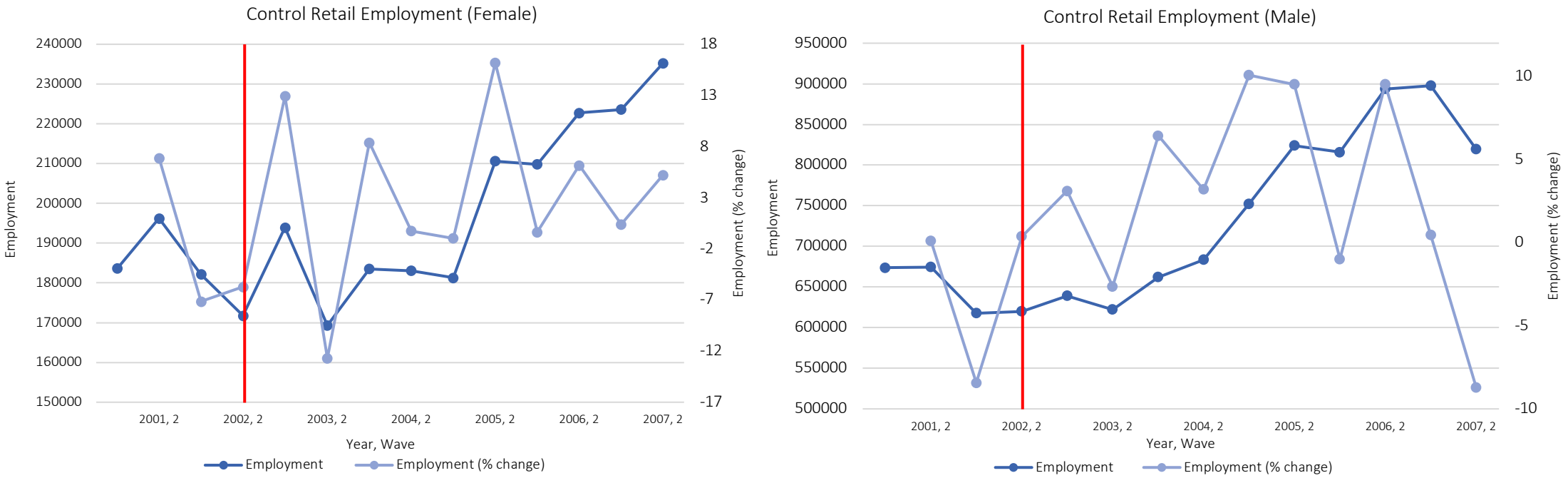
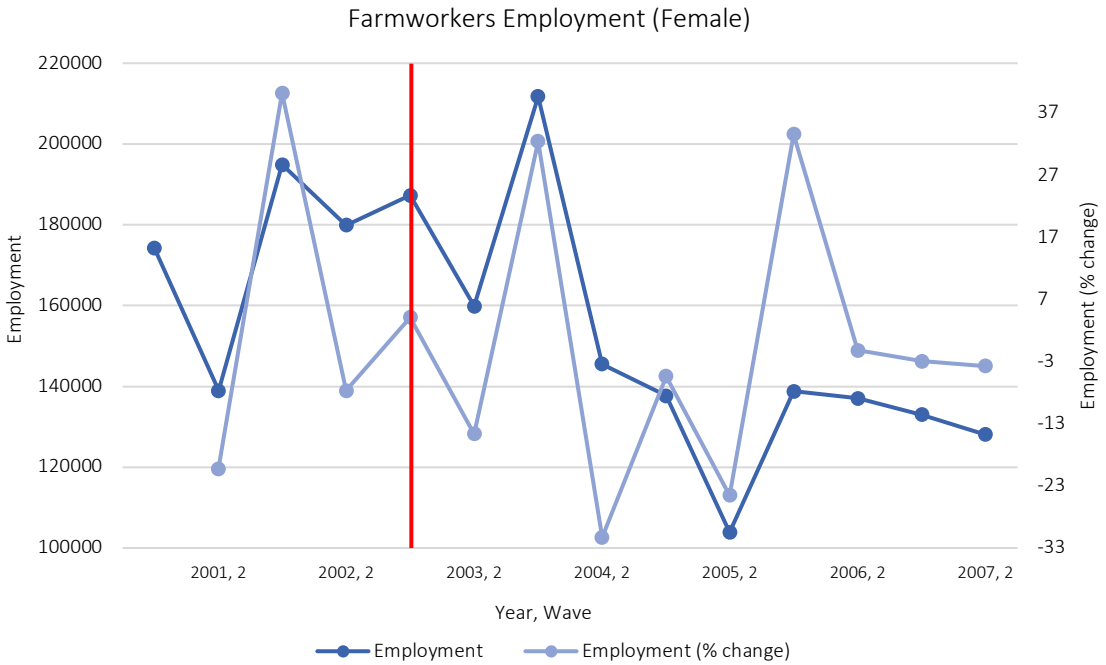


Figure 10: Control Retail Male and Female Average Employment (Absolute Values and Percentage Changes)

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: 1. The vertical red line reflects the period in which the sectoral minimum wage for retail workers was instituted. 2. The x-axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2). 3. The left y-axis represents the total number of men or women employed in the retail sector in each wave and the right y-axis represents the percentage change in men or women employed in the retail sector between the previous wave and the current wave.



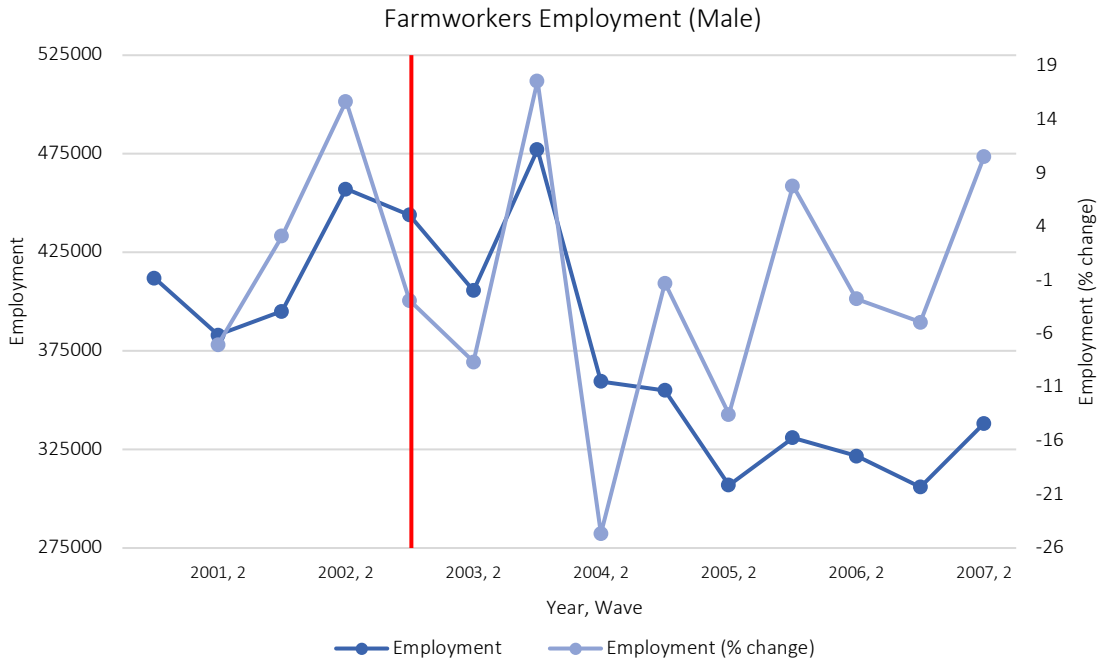
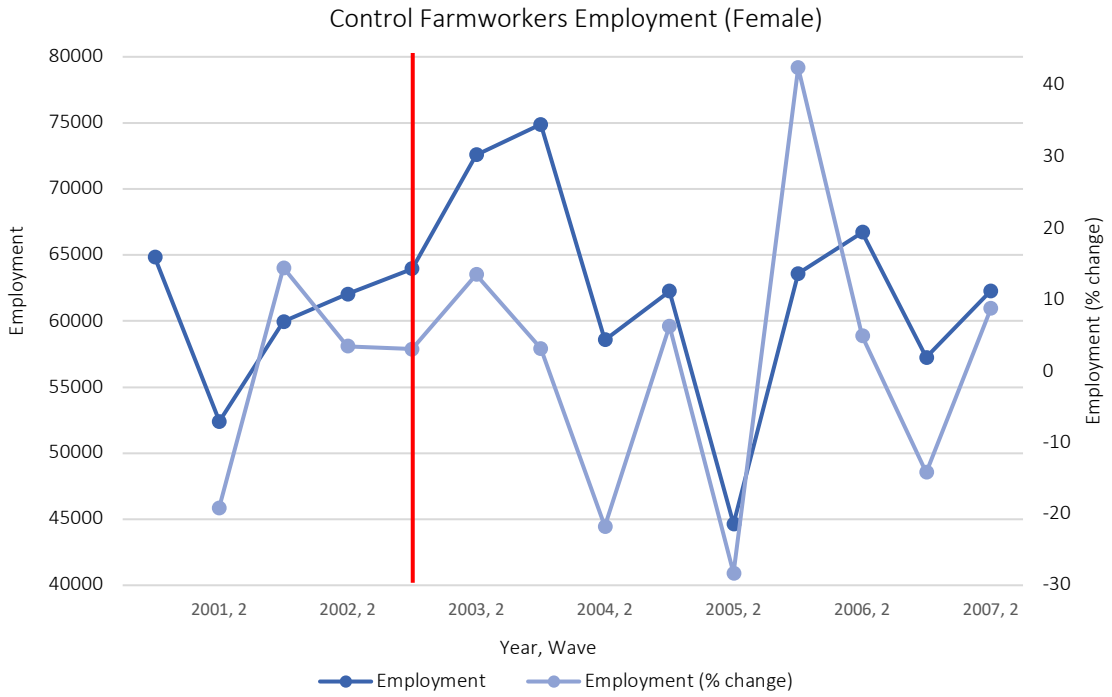


Figure 11: Farmworkers Male and Female Average Employment (Absolute Values and Percentage Changes)

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: 1. The vertical red line reflects the period in which the sectoral minimum wage for agricultural workers was instituted. 2. The x-axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2). 3. The left y-axis represents the total number of men or women employed in the retail sector in each wave and the right y-axis represents the percentage change in men or women employed in the retail sector between the previous wave and the current wave.



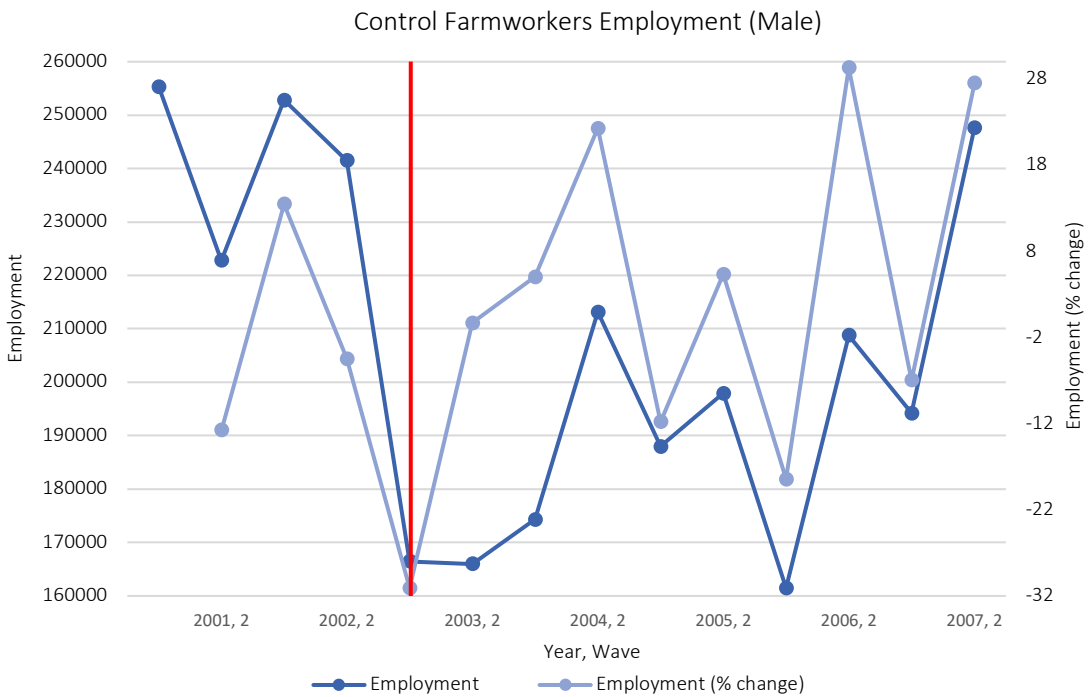


Figure 12: Control Farmworkers Male and Female Average Employment (Absolute Values and Percentage Changes)

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: 1. The vertical red line reflects the period in which the sectoral minimum wage for agricultural workers was instituted. 2. The x-axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2). 3. The left y-axis represents the total number of men or women employed in the retail sector in each wave and the right y-axis represents the percentage change in men or women employed in the retail sector between the previous wave and the current wave.

A.3 Unadjusted Gender Wage Gap for Selected Percentiles

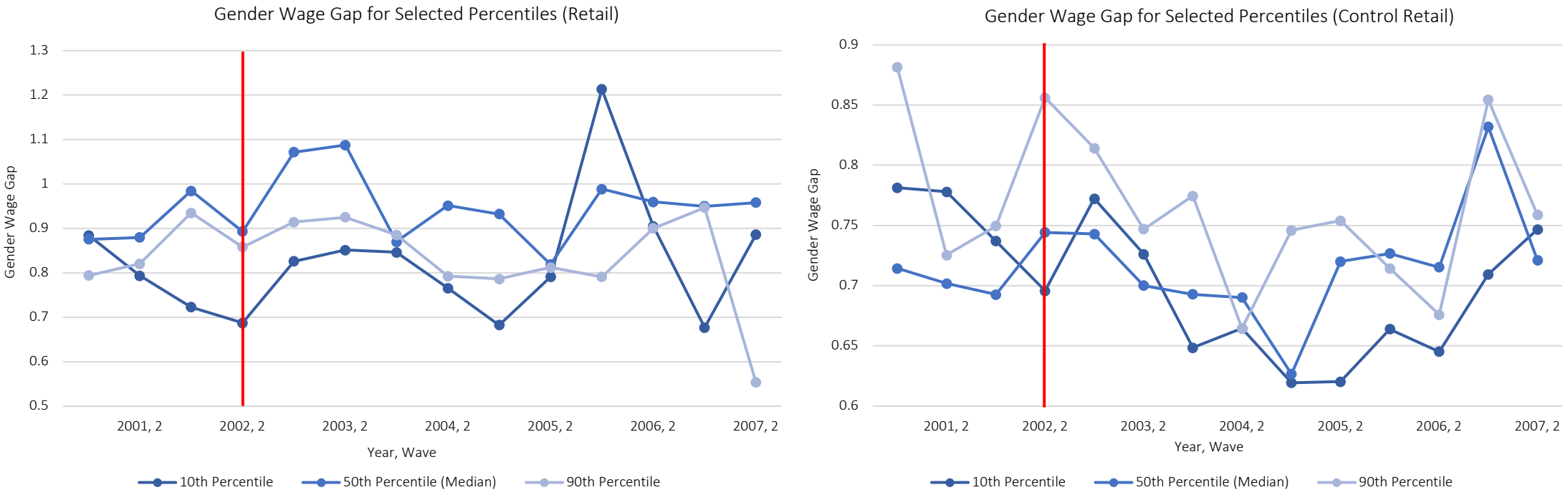
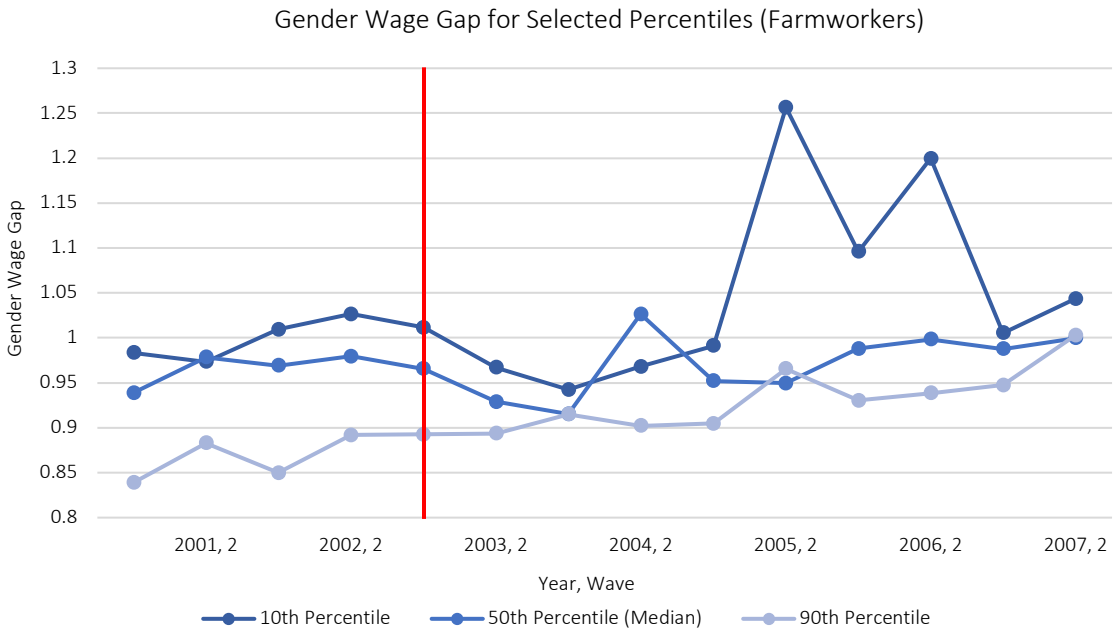
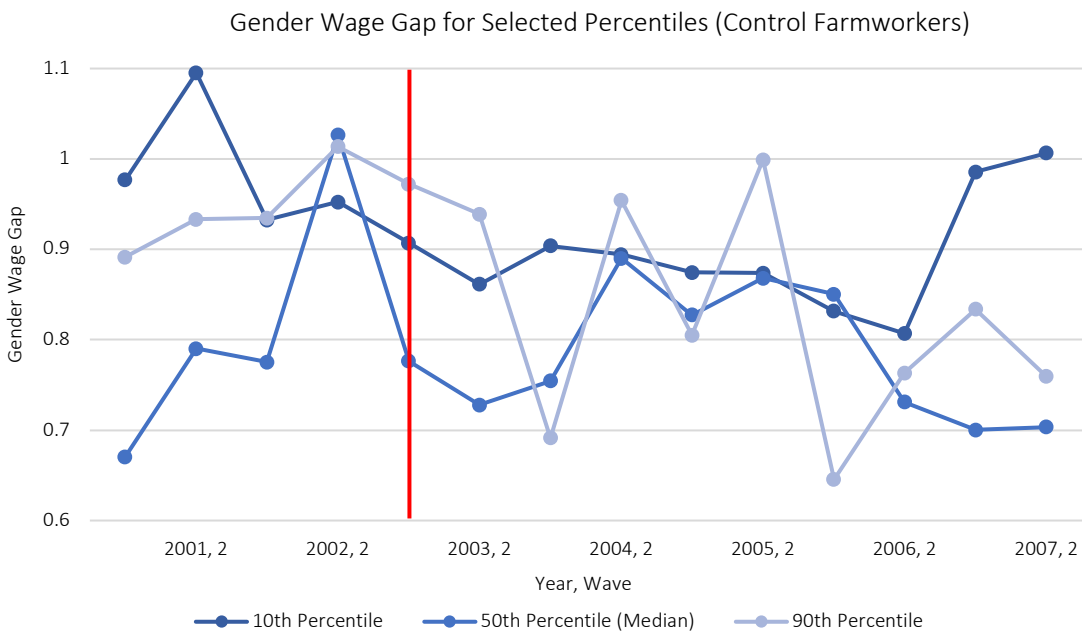


Figure 13: Unadjusted Gender Wage Gap for Selected Percentiles (Retail versus Control Retail)

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: 1. The gender wage gap represents women's aggregate real hourly wages divided by men's aggregate real hourly wages in a given wave. Specifically, figure 13 is the unadjusted wage gap – it does not account for other factors that determine pay such as education level and experience. 2. The vertical red line reflects the period in which the sectoral minimum wage for retail workers was instituted. 3. The x-axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2).





<u>Figure 14</u>: Unadjusted Gender Wage Gap for Selected Percentiles (Farmworkers versus Control Farmworkers)

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Note: 1. The gender wage gap represents women's aggregate real hourly wages divided by men's aggregate real hourly wages in a given wave. Specifically, figure 14 is the unadjusted wage gap – it does not account for other factors that determine pay such as education level and experience. 2. The vertical red line reflects the period in which the sectoral minimum wage for agricultural workers was instituted. 3. The x-axis depicts the year and LFS survey wave (for each year, data was collected in March, wave 1, and September, wave 2).

A.5 Full Regression Tables (Regression Results with and without Controls)

Table 30: Employment Regression Results (Retail) – With and Without Controls

Regre	1	2	3	4	5	6	7	8	9	10	11	12
Independent Variables	2(a) F	2(a) F_m	2(a) F	2(a) F_m	2(a) M	2(b) M_m	2(a) M	2(a) M_m	2(a) All	2(a) All_m	2(a) All	2(a) All_m
POST	0.00469	0.000933	-0.0365	-0.00628	0.0216	0.00346	0.0147	0.00212	0.0216	0.00381	0.00350	0.000548
	(0.02)	(0.004)	(0.02)	(0.003)	(0.02)	(0.003)	(0.02)	(0.003)	(0.02)	(0.004)	(0.02)	(0.003)
Wage Gap	-0.141***	-0.0280***	0.0736	0.0127	-0.149***	-0.0238***	0.0112	0.00162	-0.149***	-0.0262***	0.0153	0.00240
	(0.04)	(0.008)	(0.04)	(0.008)	(0.04)	(0.007)	(0.04)	(0.006)	(0.04)	(0.007)	(0.04)	(0.007)
Female									0.193***	0.0339***	0.112***	0.0175***
									(0.02)	(0.004)	(0.02)	(0.004)
POST*Wage Gap	-0.00270	-0.000537	-0.0590	-0.0101	0.0495	0.00790	0.000290	0.0000419	0.0495	0.00871	0.00304	0.000475
	(0.04)	(0.009)	(-0.05)	(0.009)	(0.05)	(0.007)	(0.05)	(0.008)	(0.05)	(0.008)	(0.05)	(0.007)
POST*Female									-0.0169	-0.00298	-0.0237	-0.00372
									(0.03)	(0.005)	(0.02)	(0.004)
Wage Gap* Female									0.00801	0.00141	0.0433	0.00678
									(0.05)	(0.009)	(0.05)	(0.008)
POST*Wage Gap* Female									-0.0522	-0.00918	-0.0555	-0.00869
									(0.06)	(0.010)	(0.06)	(0.009)
Other Controls Included	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Constant	-1.178***		-1.374***		-1.371***		-1.073***		-1.371***		-1.159***	
	(0.02)		(0.132)		(0.02)		(0.11)		(0.02)		(0.07)	
Observations	72907	72907	72284	72284	97618	97618	96990	96990	170525	170525	169274	169274

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for employment (=1 if employed in retail and =0 otherwise). 2. The sample consists of individuals who are employed or seeking work, aged 15-65 and who have attained a matric or less. 3. Specification 1(a) includes either all female retail workers and the female control group or all male retail workers and the male control group, while specification 1(b) includes all those in the retail sector and the control group. 4. Specifications 2(a) and 2(b) only include those in the retail sector. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. _m refers to marginal effects – these are used for the interpretation of the results. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, marital status and household headship.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 31: Log Real Hourly Wages Regression Results (Retail) – With and Without Controls

	1	2	3	4	5	6	7	8	9	10	11	12
Independent Variables	1(a) F	1(a) M	1(a) F	1(a) M	1(b) All	1(b) All	2(a) F	2(a) M	2(a) F	2(a) M	2(b) All	2(b) All
POST	0.049	0.115***	0.022	0.094***	0.115***	0.090***	0.098***	0.067*	0.030	0.039	0.067*	0.028
	(0.033)	(0.018)	(0.025)	(0.014)	(0.018)	(0.014)	(0.036)	(0.036)	(0.026)	(0.024)	(0.036)	(0.024)
Retail	0.041	-0.015	-0.134***	-0.225***	-0.015	-0.240***						
	(0.041)	(0.032)	(0.031)	(0.024)	(0.032)	(0.024)						
Female					-0.279***	-0.320***					-0.170***	-0.175***
					(0.030)	(0.023)					(0.041)	(0.030)
POST*Retail	0.092*	-0.038	0.045	-0.039	-0.038	-0.039						
	(0.047)	(0.039)	(0.035)	(0.028)	(0.039)	(0.028)						
POST*Female					-0.066*	-0.057**					0.031	0.018
					(0.035)	(0.028)					(0.048)	(0.035)
Retail*Female					0.056	0.122***						
					(0.051)	(0.037)						
POST*Retail*Female					0.130**	0.088*						
					(0.060)	(0.045)						
Wage Gap							-0.651***	-0.666***	-0.391***	-0.462***	-0.666***	-0.471***
							(0.067)	(0.069)	(0.047)	(0.051)	(0.069)	(0.051)
POST*Wage Gap							0.111	0.278***	0.038	0.144**	0.278***	0.158**
							(0.075)	(0.085)	(0.054)	(0.062)	(0.085)	(0.062)
Wage Gap*Female											0.015	0.083
											(0.089)	(0.066)
POST*Wage Gap*Female											-0.166	-0.133*
											(0.105)	(0.077)
Other Controls Included	No	No	Yes	Yes	No	Yes	No	No	Yes	Yes	No	Yes
Constant	1.399***	1.678***	0.441***	0.868***	1.678***	0.863***	1.487***	1.656***	0.389**	0.495***	1.656***	0.480***
	(0.029)	(0.016)	(0.110)	(0.064)	(0.016)	(0.056)	(0.032)	(0.028)	(0.169)	(0.159)	(0.028)	(0.115)
Observations	10,912	25,335	10,677	24,784	36,247	35,461	5,154	4,937	5,046	4,806	10,091	9,852
R-squared	0.008	0.004	0.382	0.329	0.031	0.357	0.100	0.055	0.502	0.493	0.086	0.495

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample includes individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female retail workers and the female retail control group or all male retail workers and the male retail control group, while specification 1(b) includes all those in the retail sector and the control group. 4. Specification 2(a) and 2(b) only include those in the retail sector. 5. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status, and contract type.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 32: Weekly Hours Worked Regression Results (Retail) – With and Without Controls

	1	2	3	4	5	6	7	8	9	10	11	12
Independent Variables	1(a) F	1(a) M	1(a) F	1(a) M	1(b) All	1(b) All	2(a) F	2(a) M	2(a) F	2(a) M	2(b) All	2(b) All
POST	-1.431***	-2.603***	-1.245***	-2.592***	-2.603***	-2.572***	-1.679***	-1.197***	-1.149***	-0.723**	-1.197***	-0.641*
	(0.429)	(0.236)	(0.412)	(0.237)	(0.236)	(0.238)	(0.378)	(0.373)	(0.362)	(0.365)	(0.373)	(0.360)
Retail	1.397***	0.205	2.556***	1.071***	0.205	1.153***						
	(0.456)	(0.358)	(0.453)	(0.377)	(0.358)	(0.366)						
Female					-2.176***	-1.682***					-1.231***	-0.506
					(0.385)	(0.393)					(0.431)	(0.426)
POST*Retail	-0.465	1.364***	-0.293	1.668***	1.364***	1.671***						
	(0.556)	(0.439)	(0.528)	(0.431)	(0.439)	(0.430)						
POST*Female					1.172**	1.243***					-0.482	-0.620
					(0.474)	(0.471)					(0.518)	(0.493)
Retail*Female					1.191**	1.266**						
					(0.573)	(0.560)						
POST*Retail*Female					-1.829***	-1.998***						
					(0.698)	(0.680)						
Wage Gap							3.935***	3.262***	2.499***	2.522***	3.262***	2.509***
							(0.708)	(0.741)	(0.690)	(0.736)	(0.741)	(0.733)
POST*Wage Gap							-0.446	0.037	0.276	0.276	0.037	0.235
							(0.847)	(0.916)	(0.830)	(0.906)	(0.917)	(0.902)
Wage Gap*Female											0.674	0.027
											(1.020)	(0.996)
POST*Wage Gap*Female											-0.482	0.124
											(1.249)	(1.229)
Other Control Variables	No	No	Yes	Yes	No	Yes	No	No	Yes	Yes	No	Yes
Constant	48.443***	50.618***	53.064***	50.568***	50.618***	51.378***	49.743***	50.974***	54.032***	52.704***	50.974***	53.222***
	(0.345)	(0.197)	(2.020)	(1.054)	(0.197)	(0.878)	(0.328)	(0.301)	(2.640)	(2.182)	(0.302)	(1.637)
Observations	12,933	27,101	12,613	26,459	40,034	39,072	7,101	6,858	6,908	6,630	13,959	13,538
R-squared	0.007	0.011	0.062	0.036	0.012	0.043	0.026	0.017	0.104	0.086	0.025	0.096

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is weekly hours worked 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female retail workers and the female retail control group or all male retail workers and the male retail control group, while specification 1(b) includes all those in the retail sector and the control group. 4. Specification 2(a) and 2(b) only include those in the retail sector. 5. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 33a: Contract Coverage Regression Results (Retail) – With and Without Controls

Independent Variables	1 1(a) F	2 1(a) F_m	3 1(a) F	4 1(a) F_m	5 1(a) M	6 1(a) M_m	7 1(a) M	8 1(a) M_m	9 1(b) All	10 1(b) All_m	11 1(b) All	12 1(b) All_m
POST	0.307***	0.117***	0.331***	0.107***	0.292***	0.113***	0.310***	0.101***	0.294***	0.112***	0.311***	0.101***
	(6.52)	(6.57)	(6.65)	(6.71)	(10.50)	(10.65)	(10.62)	(10.73)	(10.30)	(10.41)	(10.66)	(10.73)
Retail	0.199***	0.0757***	-0.0991	-0.0320	0.292***	0.113***	-0.132**	-0.0428**	0.228***	0.0868***	-0.135**	-0.0439**
	(3.83)	(3.84)	(-1.72)	(-1.72)	(10.50)	(10.65)	(-2.88)	(-2.89)	(5.64)	(5.64)	(-3.06)	(-3.07)
Female									0.0128	0.00486	-0.0287	-0.00932
									(0.29)	(0.29)	(-0.63)	(-0.63)
POST*Retail	0.0785	0.0299	0.0941	0.0304	0.124*	0.0479*	0.166**	0.0540**	0.140**	0.0536**	0.168**	0.0546**
	(1.23)	(1.23)	(1.37)	(1.37)	(2.46)	(2.46)	(3.07)	(3.07)	(2.72)	(2.73)	(3.12)	(3.12)
POST*Female									0.0236	0.00899	0.0165	0.00536
									(0.43)	(0.43)	(0.29)	(0.29)
Retail* Female									-0.0356	-0.0136	0.0344	0.0112
									(-0.54)	(-0.54)	(0.50)	(0.50)
POST*Retail* Female									-0.0437	-0.0167	-0.0685	-0.0223
									(-0.53)	(-0.53)	(0.79)	(0.79)
Other Controls Included	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Constant	-0.144***		-1.923***		-0.149***		-2.086***		-0.120***		-2.038***	
	(-3.71)		(-8.28)		(-6.85)		(-13.86)		(-5.37)		(-16.26)	
Observations	13995	13995	12804	12804	28285	28285	26856	26856	39808	39808	39660	39660

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for contract coverage (=1 if employed with a written contract and =0 otherwise). 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female retail workers and the female retail control group or all male retail workers and the male retail control group, while specification 1(b) includes all those in the retail sector and the control group. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. Robust standard errors clustered by district councils are displayed in parentheses. 6. Individual controls include race, age, education, household headship, marital status, trade union membership public/private sector status and formal/informal sector status.
Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 33b: Contract Coverage (Retail) – With and Without Controls

Independent Variables	1 2(a) F	2 2(a) F_m	3 2(a) F	4 2(a) F_m	5 2(a) M	6 2(a) M_m	7 2(a) M	8 2(a) M_m	9 2(b) All	10 2(b) All_m	11 2(b) All	12 2(b) All_m
POST	0.411***	0.158***	0.492***	0.149***	0.248***	0.0919***	0.354***	0.105***	0.248***	0.0932***	0.349***	0.104***
	(21.32)	(22.24)	(25.66)	(26.47)	(12.77)	(12.88)	(19.58)	(19.94)	(12.76)	(12.87)	(19.40)	(19.64)
Wage Gap	-0.459***	-0.176***	-0.296***	-0.0894***	-0.562***	-0.208***	-0.322***	-0.0952***	-0.562***	-0.211***	-0.339***	-0.101***
	(-11.39)	(-11.58)	(-7.82)	(-7.87)	(-15.05)	(-15.37)	(-9.26)	(-9.30)	(-15.04)	(-15.31)	(-9.77)	(-9.80)
Female									-0.373***	-0.140***	-0.0862***	-0.0258***
									(-18.79)	(-19.05)	(-4.50)	(-4.50)
POST*Wage Gap	0.0220	0.00845	-0.0853	-0.0258	0.154***	0.0569***	0.0683	0.0202	0.154***	0.0577***	0.0702	0.0210
	(0.49)	(0.49)	(-1.91)	(-1.91)	(3.64)	(3.64)	(1.66)	(1.66)	(3.64)	(3.64)	(1.72)	(1.72)
POST*Female									0.163***	0.0610***	0.151***	0.0450***
									(7.18)	(7.19)	(6.74)	(6.74)
Wage Gap* Female									0.103*	0.0385*	0.0394	0.0118
									(2.49)	(2.49)	(0.99)	(0.99)
POST*Wage Gap* Female									-0.132**	-0.0494**	-0.148**	-0.0442**
									(-2.71)	(-2.71)	(-3.01)	(-3.01)
Other Controls Included	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Constant	-0.244***		-1.769***		0.129***		-1.928***		-0.129***		-1.831***	
	(-14.05)		(-16.47)		(7.01)		(-22.17)		(7.01)		(125.62)	
Observations	63251	63251	63127	63127	91475	91475	91201	91201	154726	154726	154328	154328

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for contract coverage (=1 if employed with a written contract and =0 otherwise). 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specifications 2(a) and 2(b) only include those in the retail sector. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. Robust standard errors clustered by district councils are shown in parentheses. 5. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status and formal/informal sector status.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 34: Employment (Farmworkers) – With and Without Controls

Independent Variables	1 2(a) F	2 2(a) F_m	3 2(a) F	4 2(a) F_m	5 2(a) M	6 2(b) M_m	7 2(a) M	8 1(a) M_m	9 2(a) All	10 2(a) All_m	11 2(a) All	12 2(a) All_m
POST	0.0384	0.00201	0.118	0.00433	-0.182**	-0.0109**	-0.0758	-0.00335	-0.182**	-0.0103**	-0.0776	-0.00324
	(0.07)	(0.004)	(0.09)	(0.003)	(0.07)	(0.004)	(0.09)	(0.004)	(0.07)	(0.004)	(0.08)	(0.004)
Wage Gap	5.346***	0.280***	6.500***	0.238***	5.165***	0.310***	5.574***	0.246***	5.165***	0.294***	5.652***	0.236***
	(0.24)	(0.001)	(0.34)	(0.008)	(0.30)	(0.011)	(0.36)	(0.008)	(0.30)	(0.012)	(0.36)	(0.009)
Female									-0.570***	-0.0324***	-0.651***	-0.0272***
									(0.06)	(0.004)	(0.08)	(0.004)
POST*Wage Gap	-0.124	-0.00649	0.0352	0.00129	0.181	0.0109	0.393	0.0173	0.181	0.0103	0.377	0.0157
	(0.07)	(0.011)	(0.26)	(0.001)	(0.26)	(0.016)	(0.29)	(0.013)	(0.26)	(0.015)	(0.29)	(0.012)
POST*Female									0.220***	0.0125***	0.215**	0.00899**
									(0.06)	(0.004)	(0.08)	(0.003)
Wage Gap* Female									0.182	0.0103	0.633*	0.0264*
									(0.23)	(0.013)	(0.27)	(0.011)
POST*Wage Gap* Female									-0.305	-0.0174	-0.320	-0.0134
									(0.22)	(0.013)	(0.26)	(0.011)
Other Controls Included	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Constant	-1.521***		-1.323***		-0.950***		0.338		-0.950***		0.160	
	(-20.36)		(0.37)		(0.07)		(0.24)		(0.07)		(0.23)	
Observations	65005	65005	64861	64861	89436	89436	89050	89050	154441	154441	153911	153911

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for employment (=1 if employed in retail and =0 otherwise). 2. The sample consists of individuals who are employed or seeking work, aged 15-65 and who have attained a matric or less. 3. Specification 1(a) includes either all female agricultural workers and the female control group or all male agricultural workers and the male control group, while specification 1(b) includes all those in the agricultural sector and the control group. 4. Specifications 2(a) and 2(b) only include those in the agricultural sector. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. _m refers to marginal effects – these are used for the interpretation of the results. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, marital status and household headship. 8. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 35: Log Real Hourly Wages (Farmworkers) – With and Without Controls

	1	2	3	4	5	6	7	8	9	10	11	12
Independent Variables	1(a) F	1(a) M	1(a) F	1(a) M	1(b) All	1(b) All	2(a) F	2(a) M	2(a) F	2(a) M	2(b) All	2(b) All
POST	0.217***	0.345***	0.149***	0.240***	0.345***	0.243***	0.211***	0.190***	0.168***	0.151***	0.190***	0.152***
	(0.050)	(0.028)	(0.047)	(0.027)	(0.028)	(0.027)	(0.042)	(0.035)	(0.038)	(0.030)	(0.035)	(0.030)
Farmworkers	-0.392***	-0.448***	-0.395***	-0.587***	-0.448***	-0.585***						
	(0.048)	(0.027)	(0.041)	(0.025)	(0.028)	(0.025)						
Female					-0.131***	-0.229***					-0.042	-0.004
					(0.046)	(0.043)					(0.041)	(0.038)
POST*Farmworkers	0.130**	-0.027	0.138***	0.040	-0.027	0.036						
	(0.056)	(0.033)	(0.050)	(0.030)	(0.033)	(0.030)						
POST*Female					-0.128**	-0.098*					0.021	0.012
					(0.054)	(0.051)					(0.047)	(0.043)
Farmworkers*Female					0.056	0.189***						
					(0.051)	(0.045)						
POST*Farmworkers*Female					0.158***	0.108**						
					(0.061)	(0.055)						
Wage Gap							-0.978***	-0.905***	-0.725***	-0.629***	-0.905***	-0.633***
							(0.079)	(0.071)	(0.077)	(0.066)	(0.071)	(0.065)
POST*Wage Gap							0.332***	0.316***	0.324***	0.319***	0.316***	0.315***
							(0.088)	(0.076)	(0.076)	(0.064)	(0.076)	(0.064)
Wage Gap*Female											-0.073	-0.086
											(0.090)	(0.078)
POST*Wage Gap*Female											0.016	0.015
											(0.101)	(0.088)
Other Control Included	No	No	Yes	Yes	No	Yes	No	No	Yes	Yes	No	Yes
Constant	0.995***	1.126***	1.560***	1.166***	1.126***	1.278***	1.013***	1.055***	1.762***	0.971***	1.055***	1.163***
	(0.043)	(0.022)	(0.259)	(0.118)	(0.022)	(0.112)	(0.038)	(0.035)	(0.283)	(0.123)	(0.035)	(0.118)
Observations	9,672	24,913	9,501	24,439	34,585	33,940	7,572	18,495	7,447	18,163	26,067	25,610
R-squared	0.127	0.172	0.322	0.338	0.169	0.338	0.262	0.181	0.359	0.327	0.203	0.333

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female agricultural workers and the female agricultural control group or all male agricultural workers and the male agricultural control group, while specification 1(b) includes all those in the agricultural sector and the control group. 4. Specifications 2(a) and 2(b) only include those in the retail sector. 5. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type. 8. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 36: Weekly Hours Worked (Farmworkers) – With and Without Controls

	1	2	3	4	5	6	7	8	9	10	11	12
Independent Variables	1(a) F	1(a) M	1(a) F	1(a) M	1(b) All	1(b) All	2(a) F	2(a) M	2(a) F	2(a) M	2(b) All	2(b) All
POST	-1.213*	0.031	-1.117*	0.333	0.031	0.256	-0.564	-0.967	-0.210	-2.034***	-2.294***	-2.099***
	(0.620)	(0.417)	(0.629)	(0.428)	(0.416)	(0.426)	(0.807)	(0.849)	(0.566)	(0.517)	(0.543)	(0.522)
Farmworkers	0.727	5.272***	0.412	5.373***	5.272***	5.385***						
	(0.559)	(0.393)	(0.568)	(0.405)	(0.394)	(0.405)						
Female					0.690	1.158**					-4.239***	-3.764***
					(0.547)	(0.554)					(0.689)	(0.685)
POST*Farmworkers	-0.125	-2.245***	0.159	-2.238***	-2.245***	-2.209***						
	(0.707)	(0.501)	(0.700)	(0.506)	(0.501)	(0.504)						
POST*Female					-1.244*	-1.227*					2.242***	2.374***
					(0.718)	(0.721)					(0.695)	(0.694)
Farmworkers*Female					-4.544***	-5.000***						
					(0.636)	(0.643)						
POST*Farmworkers*Female					2.120***	2.355***						
					(0.820)	(0.825)						
Wage Gap							3.126***	2.571**	5.326***	4.200***	5.287***	4.337***
							(1.187)	(1.134)	(1.408)	(1.127)	(1.079)	(1.127)
POST*Wage Gap							1.768	0.583	-3.008*	0.064	-0.018	0.093
							(1.449)	(1.498)	(1.459)	(1.109)	(1.139)	(1.119)
Wage Gap*Female											0.886	0.472
											(1.550)	(1.522)
POST*Wage Gap*Female											-3.068*	-2.965*
											(1.673)	(1.672)
Other Controls Included	No	No	Yes	Yes	No	Yes	No	No	Yes	Yes	No	Yes
Constant	49.159***	48.469***	43.810***	52.410***	48.469***	50.388***	51.039***	52.943***	39.877***	54.987***	51.529***	52.783***
	(0.486)	(0.306)	(2.227)	(1.948)	(0.306)	(1.773)	(0.671)	(0.647)	(2.239)	(2.088)	(0.549)	(1.936)
Observations	9,860	25,380	9,680	24,897	35,240	34,577	5,491	5,141	7,592	18,552	26,616	26,144
R-squared	0.005	0.036	0.030	0.053	0.038	0.051	0.021	0.009	0.037	0.039	0.047	0.055

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is weekly hours worked. 2. The sample consists of individuals who are employed, aged 15-65 and work full-time (≥27 hours). 3. Specification 1(a) includes either all female agricultural workers and the female agricultural control group or all male agricultural workers and the male agricultural control group, while specification 1(b) includes all those in the agricultural sector and the control group. 4. Specifications 2(a) and 2(b) only include those in the agricultural sector. 5. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 6. Robust standard errors clustered by district councils are displayed in parentheses. 7. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type. 8. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 37a: Contract Coverage (Farmworkers)

Independent Variables	(1) 1(a) F	(2) 1(a) F_m	3 1(a) F	4 1(a) F_m	5 1(a) M	6 1(a) M_m	7 1(a) M	8 1(a) M_m	9 1(b) All	10 1(b) All_m	11 1(b) All	12 1(b) All_m
POST	0.468***	0.179***	0.405***	0.142***	0.542***	0.206***	0.381***	0.129***	0.542***	0.206***	0.382***	0.131***
	(5.12)	(5.29)	(4.32)	(4.44)	(10.75)	(10.92)	(7.41)	(7.46)	(10.74)	(10.87)	(7.48)	(7.52)
Farmworkers	-0.238**	0.0908**	0.376***	0.131***	0.155**	0.0591**	-0.162**	0.0549**	0.155**	0.0591**	-0.165**	0.0565**
	(-3.26)	(-3.29)	(-5.00)	(-5.04)	(-18.28)	(-19.01)	(-3.05)	(-3.07)	(2.98)	(2.96)	(-3.12)	(-3.14)
Female									0.330***	0.126***	0.208*	0.0714*
									(3.93)	(3.90)	(2.34)	(2.33)
POST*Farmworkers	-0.0815	-0.0311	-0.0186	-0.00652	-0.0364	-0.0139	0.192**	0.0653**	-0.0364	-0.0139	0.190**	0.0651**
	(-0.88)	(-0.88)	(-0.20)	(-0.20)	(-0.56)	(-0.55)	(2.86)	(2.88)	(-0.56)	(-0.55)	(2.84)	(2.86)
POST*Female									-0.0732	-0.0279	0.0179	0.00614
									(-0.71)	(-0.71)	(0.17)	(0.17)
Farmworkers* Female									0.393***	0.150***	-0.212*	-0.0725*
									(-4.74)	(-4.73)	(-2.42)	(-2.42)
POST*Farmworkers* Female									-0.0451	-0.0172	-0.195	-0.0667
									(-0.42)	(-0.42)	(-1.74)	(-1.74)
Other Controls Included	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Constant	-0.258***		-2.235***		-0.588***		-2.355***		-0.588***		-2.360***	
	(-3.36)		(-3.75)		(-16.24)		(-9.68)		(-16.23)		(-10.59)	
Observations	9779	9779	9722	9722	25289	25289	25117	25117	35068	35068	34839	34839

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for contract coverage (=1 if employed with a written contract and =0 otherwise). 2. The sample includes individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specification 1(a) includes either all female agricultural workers and the female agricultural control group or all male agricultural workers and the male agricultural control group, while specification 1(b) includes all those in the agricultural sector and the control group. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. Robust standard errors clustered by district councils are displayed in parentheses. 6. Individual controls include race, age, education, household headship, marital status, public/private sector status, formal/informal sector status and trade union membership. 7. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 38b: Contract Coverage (Farmworkers)

Independent Variables	1 2(a) F	2 2(a) F_m	3 2(a) F	4 2(a) F_m	5 2(a) M	6 2(b) M_m	7 2(a) M	8 1(a) M_m	9 2(a) All	10 2(a) All_m	11 2(a) All	12 2(a) All_m
POST	0.434***	0.167***	0.479***	0.146***	0.343***	0.127***	0.417***	0.124***	0.343***	0.129***	0.418***	0.125***
	(13.83)	(14.29)	(16.06)	(16.45)	(14.57)	(14.77)	(17.26)	(17.54)	(14.56)	(14.80)	(17.41)	(17.68)
Wage Gap	-0.496***	-0.191***	-0.376***	-0.114***	-0.721***	-0.267***	-0.396***	-0.118***	-0.721***	-0.271***	-0.415***	-0.125***
	(-9.36)	(-9.54)	(-8.33)	(-8.42)	(-18.28)	(-19.01)	(-10.56)	(-10.68)	(-18.27)	(-18.86)	(-11.16)	(-11.29)
Female									-0.364***	-0.137***	-0.0955***	-0.0287***
									(-13.84)	(-14.02)	(-3.84)	(-3.84)
POST*Wage Gap	0.0694	0.0267	-0.0108	-0.00328	0.337***	0.125***	0.258***	0.0767***	0.337***	0.127***	0.262***	0.0787***
	(1.22)	(1.22)	(-0.21)	(-0.21)	(7.71)	(7.74)	(5.99)	(6.00)	(7.71)	(7.75)	(6.12)	(6.13)
POST*Female									0.0913**	0.0343**	0.0658*	0.0198*
									(3.15)	(3.15)	(2.37)	(2.37)
Wage Gap* Female									0.224***	0.0843***	0.0229	0.00689
									(4.57)	(4.56)	(0.53)	(0.53)
POST*Wage Gap* Female									0.268***	0.101***	0.267***	0.0803***
									(-4.77)	(-4.77)	(-5.10)	(-5.10)
Other Controls Included	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Constant	-0.488***		-1.764***		-0.125***		-2.026***		-0.125***		-1.889***	
	(-16.27)		(-16.69)		(-5.77)		(-21.55)		(-5.76)		(-25.31)	
Observations	56338	56338	56216	56216	84019	84019	83695	83695	140357	140357	139911	139911

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. A probit regression model is used, and the dependent variable is a dummy variable for contract coverage (=1 if employed with a written contract and =0 otherwise). 2. The sample consists of individuals aged 15-65, who are employed and work full-time (≥27 hours). 3. Specifications 2(a) and 2(b) only include those in the agricultural sector. 4. F indicates that it is a female only sample, M indicates that it is a male only sample, and All includes both men and women. 5. Robust standard errors clustered by district councils are displayed in parentheses. 6. Individual controls include race, age, education, household headship, marital status, public/private sector status, formal/informal sector status and trade union membership. 7. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

A.5 Quantile Wage Regressions

Table 39: Log Real Hourly Wages Quantile Regression, Specification 1(a) – No Controls (Retail, Female)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.137***	0.085*	0.112***	0.122***	0.010	-0.064	-0.170**
	(0.050)	(0.051)	(0.036)	(0.037)	(0.037)	(0.040)	(0.071)
Retail	-0.134***	-0.219***	-0.041	0.179***	0.103**	0.118***	0.036
	(0.047)	(0.061)	(0.055)	(0.046)	(0.042)	(0.043)	(0.076)
POST*Retail	0.075	0.231***	0.168**	0.004	0.047	0.037	0.134
	(0.070)	(0.079)	(0.069)	(0.054)	(0.048)	(0.057)	(0.090)
Other Controls Included	No	No	No	No	No	No	No
Constant	0.037	0.385***	0.864***	1.364***	1.956***	2.386***	2.700***
	(0.038)	(0.039)	(0.026)	(0.032)	(0.033)	(0.029)	(0.062)
Observations	10,912	10,912	10,912	10,912	10,912	10,912	10,912

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed, work full-time (≥27 hours), female and are either in the retail sector or retail control group. 3. Robust standard errors clustered by district councils are displayed in parentheses.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 40: Log Real Hourly Wages Quantile Regression, Specification 1(a) – Controls (Retail, Female)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.058*	0.035	0.021	0.005	0.027	0.019	-0.023
	(0.034)	(0.037)	(0.030)	(0.028)	(0.026)	(0.027)	(0.039)
Retail	-0.039	-0.087**	-0.159***	-0.144***	-0.116***	-0.098***	-0.104*
	(0.057)	(0.036)	(0.037)	(0.036)	(0.035)	(0.034)	(0.055)
POST*Retail	0.020	0.061	0.074*	0.065	0.030	-0.012	0.013
	(0.065)	(0.046)	(0.043)	(0.042)	(0.040)	(0.041)	(0.061)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.474**	-0.457**	-0.023	0.194	0.776***	1.608***	2.008***
	(0.223)	(0.193)	(0.149)	(0.146)	(0.114)	(0.210)	(0.170)
Observations	10,677	10,677	10,677	10,677	10,677	10,677	10,677

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed, work full-time (≥27 hours), female and are either in the retail sector or retail control group. 3. Robust standard errors clustered by district councils are shown in parentheses. 4. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type.
Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 41: Log Real Hourly Wages Quantile Regression, Specification 1(a) – No Controls (Retail, Male)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.227***	0.231***	0.196***	0.103***	0.050***	0.008	-0.031
	(0.038)	(0.030)	(0.020)	(0.017)	(0.017)	(0.024)	(0.034)
Retail	-0.183*	-0.090	-0.031	-0.017	-0.031	0.103**	0.111**
	(0.094)	(0.057)	(0.039)	(0.037)	(0.039)	(0.045)	(0.049)
POST*Retail	-0.120	-0.127*	-0.092*	-0.049	0.046	-0.019	0.153
	(0.110)	(0.073)	(0.047)	(0.044)	(0.050)	(0.064)	(0.095)
Other Controls Included	No	No	No	No	No	No	No
Constant	0.373***	0.670***	1.166***	1.711***	2.196***	2.642***	2.937***
	(0.028)	(0.025)	(0.016)	(0.013)	(0.014)	(0.020)	(0.025)
Observations	25,335	25,335	25,335	25,335	25,335	25,335	25,335

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed, work full-time (≥27 hours), male and are either in the retail sector or retail control group. 3. Robust standard errors clustered by district councils are displayed in parentheses.
Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 42: Log Real Hourly Wages Quantile Regression, Specification 1(a) – Controls (Retail, Male)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.086***	0.079***	0.103***	0.091***	0.104***	0.076***	0.081***
	(0.028)	(0.026)	(0.019)	(0.015)	(0.015)	(0.017)	(0.021)
Retail	-0.268***	-0.298***	-0.255***	-0.231***	-0.180***	-0.161***	-0.169***
	(0.036)	(0.051)	(0.034)	(0.026)	(0.032)	(0.035)	(0.049)
POST*Retail	0.001	0.031	-0.045	-0.051*	-0.067*	0.000	0.001
	(0.049)	(0.056)	(0.039)	(0.031)	(0.036)	(0.043)	(0.055)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.448***	-0.110	0.455***	0.842***	1.325***	1.655***	2.024***
	(0.148)	(0.141)	(0.085)	(0.079)	(0.084)	(0.103)	(0.145)
Observations	24,784	24,784	24,784	24,784	24,784	24,784	24,784

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed, work full-time (≥27 hours), male and are either in the retail sector or retail control group. 3. Robust standard errors clustered by district councils are shown in parentheses. 4. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type.
Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 43: Log Real Hourly Wages Quantile Regression, Specification 1(b) – No Controls (Retail)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.227***	0.231***	0.196***	0.103***	0.050***	0.008	-0.031
	(0.038)	(0.030)	(0.021)	(0.017)	(0.017)	(0.023)	(0.030)
Retail	-0.183**	-0.090	-0.031	-0.017	-0.031	0.103***	0.111***
	(0.084)	(0.057)	(0.040)	(0.039)	(0.042)	(0.034)	(0.042)
Female	-0.336***	-0.286***	-0.303***	-0.346***	-0.240***	-0.256***	-0.237***
	(0.055)	(0.042)	(0.031)	(0.035)	(0.036)	(0.034)	(0.068)
POST*Retail	-0.120	-0.127*	-0.092*	-0.049	0.046	-0.019	0.153
	(0.105)	(0.072)	(0.049)	(0.046)	(0.052)	(0.056)	(0.095)
POST*Female	-0.089	-0.146**	-0.084**	0.019	-0.040	-0.073	-0.140*
	(0.069)	(0.057)	(0.041)	(0.042)	(0.042)	(0.046)	(0.077)
Retail*Female	0.049	-0.129	-0.010	0.196***	0.134**	0.015	-0.075
	(0.102)	(0.080)	(0.067)	(0.059)	(0.059)	(0.056)	(0.087)
POST*Retail*Female	0.195	0.358***	0.260***	0.053	0.001	0.057	-0.018
	(0.131)	(0.104)	(0.083)	(0.070)	(0.071)	(0.081)	(0.129)
Other Controls Included	No	No	No	No	No	No	No
Constant	0.373***	0.670***	1.166***	1.711***	2.196***	2.642***	2.937***
	(0.029)	(0.026)	(0.016)	(0.013)	(0.014)	(0.019)	(0.022)
Observations	36,247	36,247	36,247	36,247	36,247	36,247	36,247

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of both men and women aged 15-65, who are employed, work full-time (≥27 hours) and are either in the retail sector or retail control group. 3. Robust standard errors clustered by district councils are displayed in parentheses.
Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 44: Log Real Hourly Wages Quantile Regression, Specification 1(b) - Controls (Retail)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.079***	0.066**	0.089***	0.085***	0.101***	0.083***	0.090***
	(0.029)	(0.027)	(0.019)	(0.015)	(0.015)	(0.016)	(0.019)
Retail	-0.279***	-0.295***	-0.281***	-0.245***	-0.190***	-0.188***	-0.197***
	(0.038)	(0.042)	(0.032)	(0.026)	(0.031)	(0.042)	(0.041)
Female	-0.357***	-0.343***	-0.350***	-0.342***	-0.280***	-0.242***	-0.219***
	(0.044)	(0.043)	(0.030)	(0.025)	(0.025)	(0.027)	(0.038)
POST*Retail	0.012	0.026	-0.034	-0.056*	-0.065*	-0.004	-0.008
	(0.054)	(0.050)	(0.038)	(0.031)	(0.036)	(0.048)	(0.053)
POST*Female	-0.024	-0.028	-0.046	-0.048	-0.082***	-0.096***	-0.095**
	(0.063)	(0.050)	(0.036)	(0.032)	(0.031)	(0.035)	(0.048)
Retail*Female	0.226***	0.195***	0.120***	0.116***	0.087*	0.116**	0.123**
	(0.067)	(0.060)	(0.046)	(0.040)	(0.047)	(0.054)	(0.057)
POST*Retail*Female	0.036	0.057	0.115**	0.126**	0.110**	0.025	0.004
	(0.094)	(0.076)	(0.057)	(0.051)	(0.056)	(0.068)	(0.075)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.284**	0.038	0.412***	0.792***	1.284***	1.768***	2.106***
	(0.112)	(0.108)	(0.075)	(0.071)	(0.071)	(0.072)	(0.124)
Observations	35,461	35,461	35,461	35,461	35,461	35,461	35,461

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of both men and women aged 15-65, who are employed, work full-time (≥27 hours) and are either in the retail sector or retail control group. 3. Robust standard errors clustered by district councils are shown in parentheses. 4. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 45: Log Real Hourly Wages Quantile Regression, Specification 1(a) – No Controls (Farmworkers, Female)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.207***	0.313***	0.409***	0.223***	0.176***	0.023	0.045
	(0.073)	(0.069)	(0.033)	(0.064)	(0.063)	(0.085)	(0.066)
Farmworkers	-0.151***	-0.125***	-0.158***	-0.365***	-0.556***	-0.786***	-0.778***
	(0.042)	(0.041)	(0.030)	(0.057)	(0.053)	(0.070)	(0.057)
POST*Farmworkers	0.099	0.033	0.020	0.161**	0.133**	0.231***	0.220***
	(0.079)	(0.073)	(0.040)	(0.067)	(0.065)	(0.090)	(0.076)
Other Controls Included	No	No	No	No	No	No	No
Constant	-0.089**	0.064*	0.385***	0.968***	1.513***	2.019***	2.222***
	(0.036)	(0.038)	(0.025)	(0.055)	(0.051)	(0.066)	(0.052)
Observations	9,672	9,672	9,672	9,672	9,672	9,672	9,672

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed, work full-time (≥27 hours), female and are either in the farmworkers or farmworkers control group. 3. Robust standard errors clustered by district councils are displayed in parentheses.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 46: Log Real Hourly Wages Quantile Regression, Specification 1(a) – Controls (Farmworkers, Female)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.151*	0.179***	0.258***	0.145***	0.120**	0.021	0.023
	(0.085)	(0.040)	(0.046)	(0.043)	(0.051)	(0.044)	(0.065)
Farmworker	-0.203***	-0.213***	-0.206***	-0.392***	-0.539***	-0.687***	-0.722***
	(0.032)	(0.018)	(0.040)	(0.037)	(0.042)	(0.044)	(0.044)
POST*Farmworker	0.129	0.122***	0.065	0.148***	0.135**	0.220***	0.246***
	(0.088)	(0.045)	(0.049)	(0.046)	(0.053)	(0.047)	(0.072)
Other Controls Included	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.076	0.122	1.524***	1.865***	2.273***	2.368	2.261
	(3.912)	(0.354)	(0.393)	(0.105)	(0.103)	(10.952)	(1.616)
Observations	9,501	9,501	9,501	9,501	9,501	9,501	9,501

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed, work full-time (≥27 hours), female and are either in the farmworkers or farmworkers control group. 3. Robust standard errors clustered by district councils are shown in parentheses. 4. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type. 5. To account for seasonality, a dummy variable representing the surveys conducted in September is included.
Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 47: Log Real Hourly Wages Quantile Regression, Specification 1(a) – No Controls (Farmworkers, Male)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.426***	0.525***	0.481***	0.351***	0.266***	0.217***	0.203***
	(0.059)	(0.043)	(0.033)	(0.027)	(0.031)	(0.039)	(0.055)
Farmworkers	-0.174***	-0.183***	-0.336***	-0.482***	-0.606***	-0.616***	-0.640***
	(0.032)	(0.026)	(0.028)	(0.024)	(0.024)	(0.026)	(0.044)
POST*Farmworkers	-0.149**	-0.130***	-0.025	-0.018	-0.007	-0.028	-0.003
	(0.067)	(0.049)	(0.036)	(0.031)	(0.034)	(0.044)	(0.065)
Other Controls Included	No	No	No	No	No	No	No
Constant	-0.069**	0.123***	0.596***	1.153***	1.646***	2.019***	2.270***
	(0.029)	(0.023)	(0.026)	(0.020)	(0.022)	(0.021)	(0.037)
Observations	24,913	24,913	24,913	24,913	24,913	24,913	24,913

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)
Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed, work full-time (≥27 hours), male and are either in the farmworkers or farmworkers control group. 3. Robust standard errors clustered by district councils are displayed in parentheses.
Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 48: Log Real Hourly Wages Quantile Regression, Specification 1(a) – Controls (Farmworkers, Male)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.271***	0.304***	0.299***	0.231***	0.189***	0.185***	0.164***
	(0.036)	(0.044)	(0.029)	(0.028)	(0.028)	(0.025)	(0.030)
Farmworkers	-0.348***	-0.394***	-0.498***	-0.622***	-0.716***	-0.723***	-0.712***
	(0.023)	(0.028)	(0.023)	(0.025)	(0.024)	(0.022)	(0.027)
POST*Farmworkers	0.036	0.033	0.054*	0.061**	0.041	0.015	0.050
	(0.042)	(0.047)	(0.032)	(0.030)	(0.030)	(0.031)	(0.038)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.299**	-0.199**	0.604***	1.313***	1.872***	2.130***	2.080***
	(0.118)	(0.099)	(0.194)	(0.161)	(0.063)	(0.075)	(0.248)
Observations	24,439	24,439	24,439	24,439	24,439	24,439	24,439

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of individuals aged 15-65, who are employed, work full-time (≥27 hours), male and are either in the farmworkers or farmworkers control group. 3. Robust standard errors clustered by district councils are shown in parentheses. 4. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type. 5. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 49: Log Real Hourly Wages Quantile Regression, Specification 1(b) – No Controls (Farmworkers)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.426***	0.525***	0.481***	0.351***	0.266***	0.217***	0.203***
	(0.057)	(0.042)	(0.033)	(0.027)	(0.031)	(0.038)	(0.051)
Farmworker	-0.174***	-0.183***	-0.336***	-0.482***	-0.606***	-0.616***	-0.640***
	(0.031)	(0.024)	(0.028)	(0.024)	(0.026)	(0.027)	(0.045)
Female	-0.020	-0.059	-0.211***	-0.186***	-0.133**	0.000	-0.048
	(0.050)	(0.048)	(0.040)	(0.057)	(0.058)	(0.082)	(0.049)
POST*Farmworker	-0.149**	-0.130***	-0.025	-0.018	-0.007	-0.028	-0.003
	(0.064)	(0.049)	(0.036)	(0.030)	(0.034)	(0.043)	(0.062)
POST*Female	-0.219**	-0.211***	-0.072	-0.128*	-0.090	-0.194*	-0.157**
	(0.104)	(0.075)	(0.052)	(0.065)	(0.073)	(0.106)	(0.065)
Farmworker*Female	0.023	0.058	0.178***	0.117*	0.050	-0.170*	-0.138**
	(0.056)	(0.051)	(0.045)	(0.060)	(0.061)	(0.087)	(0.058)
POST*Farmworker*Female	0.248**	0.164**	0.045	0.178***	0.141*	0.259**	0.223***
	(0.113)	(0.082)	(0.058)	(0.069)	(0.076)	(0.112)	(0.083)
Controls	No	No	No	No	No	No	No
Constant	-0.069**	0.123***	0.596***	1.153***	1.646***	2.019***	2.270***
	(0.028)	(0.021)	(0.026)	(0.021)	(0.023)	(0.023)	(0.038)
Observations	34,585	34,585	34,585	34,585	34,585	34,585	34,585

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of both men and women aged 15-65, who are employed, work full-time (≥27 hours) and are either in the farmworkers or farmworkers control group. 3. Robust standard errors clustered by district councils are displayed in parentheses.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 50: Log Real Hourly Wages Quantile Regression, Specification 1(b) – Controls (Farmworkers)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables	0.05	0.10	0.25	0.50 (median)	0.75	0.90	0.95
POST	0.267***	0.317***	0.308***	0.238***	0.180***	0.178***	0.175***
	(0.048)	(0.043)	(0.029)	(0.029)	(0.029)	(0.029)	(0.035)
Farmworker	-0.332***	-0.380***	-0.485***	-0.620***	-0.718***	-0.732***	-0.714***
	(0.035)	(0.024)	(0.023)	(0.026)	(0.025)	(0.022)	(0.035)
Female	-0.107***	-0.173***	-0.277***	-0.244***	-0.236***	-0.158***	-0.119***
	(0.037)	(0.035)	(0.038)	(0.042)	(0.037)	(0.050)	(0.044)
POST*Farmworker	0.025	0.014	0.040	0.059*	0.053*	0.026	0.044
	(0.053)	(0.046)	(0.032)	(0.032)	(0.032)	(0.034)	(0.041)
POST*Female	-0.103	-0.102	-0.059	-0.103*	-0.069	-0.150***	-0.178*
	(0.077)	(0.063)	(0.050)	(0.053)	(0.051)	(0.057)	(0.105)
Farmworker*Female	0.139***	0.196***	0.277***	0.214***	0.172***	0.048	0.010
	(0.043)	(0.042)	(0.041)	(0.046)	(0.040)	(0.056)	(0.052)
POST*Farmworker*Female	0.084	0.076	0.050	0.101*	0.090	0.198***	0.214*
	(0.084)	(0.069)	(0.054)	(0.057)	(0.055)	(0.065)	(0.113)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.227**	-0.116	0.696***	1.567***	2.002***	2.260***	2.243***
	(0.098)	(0.159)	(0.233)	(0.222)	(0.160)	(0.073)	(0.133)
Observations	33,940	33,940	33,940	33,940	33,940	33,940	33,940

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The dependent variable is the log of real hourly wages. 2. The sample consists of both men and women aged 15-65, who are employed, work full-time (≥27 hours) and are either in the farmworkers or farmworkers control group. 3. Robust standard errors clustered by district councils are displayed in parentheses. 4. Individual controls include race, age, education, household headship, marital status, trade union membership, public/private sector status, formal/informal sector status and contract type. 5. To account for seasonality, a dummy variable representing the surveys conducted in September is included.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

A.6 Balance Tables

Table 51: Balance Table for Female Retail Workers and Female Retail Control Group			
Variable	Retail Control (female)	Retail (female)	Difference
Wage	5.487	6.876	-1.889***
			(0.301)
	2336	2278	4614
Age	35.946	33.396	2.550***
			(0.281)
	2362	3093	5455
Years of Education	8.44	10.322	-1.880***
			(0.077)
	2363	3066	5429
African	0.730	0.608	0.122***
			(0.006)
	2363	3098	5461
Coloured	0.180	0.201	-0.021**
			(0.011)
	2363	3098	5461
White	0.047	0.132	-0.086***
			(0.008)
	2363	3098	5461
Indian	0.042	0.056	-0.013**
			(0.006)
	2363	3098	5461
Full-time	0.923	0.874	0.049***
			(0.008)
	2363	3098	5461
Hours of Work	46.090	45.736	0.354
			(0.415)
	2329	3020	5349
Written Contract	0.426	0.511	-0.084***
			(0.139)
	2258	2966	5224

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The first value for each row in columns 2 and 3 represents the mean value for each variable in the pre-law period, while the second value is the number of observations. 2. The first value in column 4 represents the difference in the mean values of a given variable between female retail workers and the female retail control group in the pre-law period and the third value is the number of observations.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 52: Balance Table for Male Retail Workers and Male Retail Control Group			
Variable	Retail Control (male)	Retail (male)	Difference
Wage	7.408	7.855	-0.448**
			(0.197)
	8539	2138	10677
Age	37.037	34.958	2.079***
			(0.238)
	8625	2941	11566
Years of Education	7.671	9.662	-1.992***
			(0.074)
	8643	2908	11551
African	0.779	0.668	0.111***
			(0.009)
	8643	2948	11591
Coloured	0.134	0.125	-0.009
			(0.007)
	8643	2948	11591
White	0.056	0.121	-0.065***
			(0.006)
	8643	2948	11591
Indian	0.029	0.084	-0.055***
			(0.004)
	8643	2948	11591
Full-time	0.942	0.938	0.004
			(0.005)
	8643	2948	11591
Hours of Work	48.874	49.305	-0.430*
			(0.307)
	8392	2866	11258
Written Contract	0.429	0.537	-0.107***
			(0.109)
	8288	2791	11079

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The first value for each row in columns 2 and 3 represents the mean value for each variable in the pre-law period, while the second value is the number of observations. 2. The first value in column 4 represents the difference in the mean values of a given variable between male retail workers and the male retail control group in the pre-law period and the third value is the number of observations.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 53: Balance Table for Female Farmworkers and Female Farmworkers Control Group			
Variable	Farmworkers Control (female)	Farmworkers (female)	Difference
Wage	3.841	2.672	1.169***
			(0.074)
	2052	7248	9300
Age	37.302	34.434	2.868***
			(0.273)
	2139	7312	9451
Years of Education	5.514	5.440	0.075
			(0.085)
	2142	7271	9413
African	0.707	0.616	0.091***
			(0.009)
	2142	7325	9467
Coloured	0.293	0.382	-0.089***
			(0.012)
	2142	7325	9467
White	0	0.002	-0.0015**
			(0.001)
	2142	7325	9467
Indian	0	0.001	-0.001
			(0.001)
	2142	7325	9467
Full-time	0.867	0.959	-0.091***
			(0.005)
	2142	7325	9467
Hours of Work	43.867	47.962	-4.065***
			(0.308)
	2126	7284	9410
Written Contract	0.458	0.388	0.069***
			(0.012)
	2098	7224	9322

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The first value for each row in columns 2 and 3 represents the mean value for each variable in the pre-law period, while the second value is the number of observations. 2. The first value in column 4 represents the difference in the mean values of a given variable between female farmworkers and the female farmworkers control group in the pre-law period and the third value is the number of observations.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 54: Balance Table for Male Farmworkers Group and Male Farmworkers Control Group			
Variable	Farmworkers Control (male)	Farmworkers (male)	Difference
Wage	4.356	2.881	1.474***
			(0.051)
	6303	17661	23964
Age	37.746	37.629	0.116
			(0.187)
	6378	17778	24156
Years of Education	5.219	4.708	0.512***
			(0.050)
	6394	17664	24058
African	0.818	0.634	0.183***
			(0.183)
	6394	17809	24203
Coloured	0.182	0.359	-0.177***
			(0.007)
	6394	17809	24203
White	0	0.006	-0.006***
			(0.001)
	6394	17809	24203
Indian	0	0.001	-0.001**
			(0.001)
	6394	17809	24203
Full-time	0.888	0.977	-0.089***
			(0.003)
	6394	17809	24203
Hours of Work	45.154	51.810	-6.656***
			(0.188)
	6325	17621	23946
Written Contract	0.327	0.458	0.424***
			(-0.131)
	6242	17548	23790

Source: Statistics South Africa, Labour Force Survey (March 2001 – September 2007)

Notes: 1. The first value for each row in columns 2 and 3 represents the mean value for each variable in the pre-law period, while the second value is the number of observations. 2. The first value in column 4 represents the difference in the mean values of a given variable between male farmworkers and the male farmworkers control group in the pre-law period and the third value is the number of observations.

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.