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# LABOUR, WAGES AND MINIMUM WAGE COMPLIANCE IN THE BREËRIVIER VALLEY SIX MONTHS AFTER THE INTRODUCTION OF MINIMUM WAGES

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# Labour, wages and minimum wage compliance in the Breërivier valley six months after the introduction of minimum wages


## Abstract

*In August 2003, six months after statutory minimum wages came into effect in South African agriculture, wine farmers in two Western Cape districts were surveyed to establish the initial employment impacts of the sectoral determination. The data suggest universal compliance with legal requirements for most labour classes. Specified wage rates required almost no wage increase in one district, and wage increases of between 16% and 25% in the other district, especially for workers at the bottom end of the wage scale. Price elasticity of demand for farm labour is estimated to be between –0.28 and –0.30. No evidence was found that tractors and labourers are substitutes in the production of wine grapes, but the data support a substitution hypothesis for labour and grape harvesting machines, although the relationship was not statistically significant. Job losses during the past year were limited to about 1% of permanent staff, and were in line with the estimated labour elasticity.*


## Introduction

In March 2003 minimum wage provisions were introduced in South African agriculture despite vocal objections from farmer organisations (Du Preez, 2002; Van Burick, 2003). Agri SA expected 150 000 regular and 130 000 seasonal jobs to be lost due to minimum wages (Cilliers, 2003a). Academics agreed. Daan Louw's simulation of the Lower Orange Basin predicted job losses of between 19% and 61% (Fouche, 2003) and Geoff Antrobus forecast that agriculture might lose another 100 000 jobs due to minimum wages (Botha, 2003).

There is evidence that unemployment is one of the main determinants of high income inequality in South Africa (Leibbrandt, *et al*., 2000; Seekings, 2000).

Any further loss of jobs in agriculture would undermine efforts to reduce poverty and inequality. Commercial agriculture employs 13.8% of people in the Western Cape, and four out of five of these in unskilled jobs (StatsSa, 2003). Thus agriculture has a valuable role to play in reducing rural poverty.

Competitive labour market models suggest a negative relationship between employment and wages. If a statutory minimum wage causes large real wage increases, significant unemployment might result if the unit cost of labour rises.

International evidence on the (minimum) wage elasticity of employment is mixed. Katz and Krueger (1992) report a positive employment effect in fast-food restaurants in Texas, but Partridge and Partridge (1999) find that minimum wages reduced employment in the US retail sector, especially after one year. Dickens *et al*. (1994) say there is no evidence that minimum wages have reduced employment in British agriculture.

In South Africa the first reports of minimum wage compliance levels in agriculture are starting to appear (Cilliers, 2003b), but this is one of the first studies to document the unemployment effects. The Breërivier valley is typical of Western Cape agriculture. The Worcester and Robertson districts were chosen since they were classified into different minimum wage categories despite virtually identical farming conditions. The two towns are only 50km apart. Worcester falls into category A, “more urban areas”, where the minimum wage was set at R800 per month and Robertson falls into category B, “more rural areas”, where the minimum wage was set at R650 per month. They thus comprise a natural experiment measuring the employment elasticity of farm labour in the Western Cape.

# Labour trends in agriculture

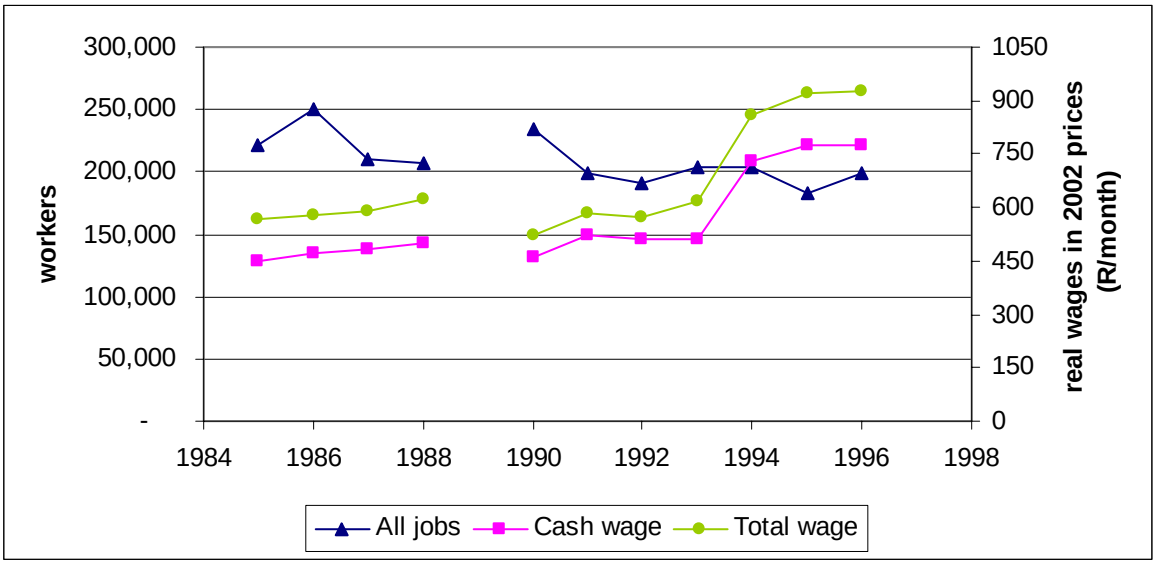
The effect of minimum wages on agriculture has to be viewed against the background of enormous labour shedding across the country in the last thirty years. Payne *et al*. (1990) report an annual decline of 1.15% between 1970 and 1990. One in five workers lost their jobs between 1990 and 1996 (Department of Labour, 2001). Western Cape agriculture bucked the trend for a short while during the 1980s, growing at a rate of 3% per year (Eckert *et al*., 1996), but Figure 1 shows that during the 1990s it also lost jobs at a rate of 2% per year. Agricultural census data end in 1996, leaving us with little concrete evidence on recent developments.

Theory predicts – and national data confirms – that, when agricultural employment falls, the remaining workers tend to earn more. From 1970 to 1990,

real wages grew at 2.6% per year in the grain producing regions of South Africa (Payne *et al.*, 1990). According to Orkin and Njobe (2000), real agricultural wages grew by 10% per year between 1985 and 1996. The period includes a 44% increase in 1994, which Simbi and Aliber (2000) question.

Simbi and Aliber (2000:12) compare the R440 per month reported in the 1998/99 October Household Survey to the R608 per month reported in the 1996 Agricultural Census to argue that the 44% increase "had more to do with what farmers *reported* than with wages they *paid*". The estimates are from different samples, and the OHS survey has the additional weakness of being category data, but the difference emphasises the need for wage and employment surveys in South African agriculture.

*Figure 1: Employment and average wages in Western Cape agriculture*




Source: Agricultural Census

Provincial agricultural data show a similar dramatic wage increase for the Western Cape in 1994. Cash wages of farm workers in constant 2003 Rand approached R800 per month in the late 1990s (Figure 1), rising at an annual rate of 4.7% over the previous twelve years. If the same trend continued after 1996, which is similar to Dimant's (2001) estimate of a real annual increase of 3.1% among unskilled industrial workers, the current agricultural wage in the Western Cape should be about R960 to R974 per month.

The most recent district-level data was collected during the Agricultural Census of 1993. That year the average Worcester wage was 1.7 times the average Robertson wage. Worcester was close to the provincial average, but Robertson was far below it. The 1993 data provide some justification for the current difference in statutory minimum wage levels. During the previous two agricultural censuses this difference did not exist. According to the 1988 and

1983 censuses, Worcester paid respectively 1.2 and 1.1 times the Robertson wage. If Robertson has caught up with Worcester since 1993 there is no justification for imposing a lower minimum wage in Robertson than in Worcester.

# Baseline data in panel survey

The survey was conducted during August and September 2003. Minimum wages came into effect on 1 March 2003, in the middle of the harvest season. Workers earn higher than normal wages during the harvest as most of them do piecework. Wage increases happen either directly before or, more typically, directly after the harvest. Six months later I expected farmers to have made the necessary wage adjustments, but not to have made many other changes to production systems. Wage levels were recorded for both February 2003 and August 2003, together with employment levels for August 2003, and the number of people leaving and joining the firm during the previous twelve months.

I collected all the data myself in semi-structured interviews of about one hour. In some cases farm businesses comprise several independent production units, and often have fathers and sons farming together. I interviewed only one owner per business, and spoke to fathers in some cases and sons in others. In five instances I talked to a manager. I interviewed four women; two woman farmers and two farm wives. All other respondents were white males above the age of twenty. Afrikaans was used in 97% of cases.

Maps of the area were used to randomly select respondents, approximately ten each from four different wards in each district. Introduction to particular wards was gained through family members[1], acquaintances or wineries. These contacts provided detailed directions and sometimes phone numbers. I used a combination of phone calls and drop-in visits to approach respondents. Several farmers were able to take the interview immediately, but most appreciated some advance warning. Ninety percent of respondents agreed to be interviewed. Almost half the “refusals” (4.5%) were due to holiday absences. The rest were failures to contact (2.25%) and pressing schedules (3.4%). Refusals were replaced through re-sampling.

[1] I grew up on a wine farm in Robertson where my brothers still farm and I studied agriculture with several of the respondents at the University of Stellenbosch. I also worked for four years as an extension officer in the fruit industry during the 1990s. I did not choose respondents that I knew from before, but it was an advantage for access that I was one of them.

The questionnaire[2] consists of five sections. The first collects background information including farm size and crop mix. Section two asks for farmers' perceptions on a variety of potential concerns, while section three focuses on perceptions about minimum wages. The last two sections collect information about labour, wages and mechanisation. Farmers report cash wages for the highest and lowest paid male and female workers, as well as numbers of workers and total labour cost, from which an average wage is constructed. The data set also contains information on casual labourers and labour contractors.

# 2002/03 labour situation

Purely on the strength of the locational difference in minimum wages, one expects Robertson, at the lower minimum wage, to have better compliance and experience fewer job losses than Worcester – if the districts are really the same.

While respondents in the two districts are on average the same age, farmers in Worcester are somewhat better educated. Farm size, as measured in cultivated area and total crop, is identical, as is the size of the grape crop. District averages and T-statistics showing that means are not different at the 95% confidence level are reported in Table 1. The wine grape crop is more important in Worcester than Robertson (T= -4.17), where peaches and apricots destined for canned fruit contribute 25% of the total crop. Fresh fruit (citrus, table grapes, pears, and plums) occur but are not common. Several farms have recently planted olives. Occasionally dairy and vegetable farming occur. One beekeeper was found. Fresh fruit requires more management input, and hence farms that produce fresh fruit often specialise in it. As a rule, complex crop mixes occur on larger units where different managers specialise in different crops.

Traditionally, wine grapes were grown in rotation with stone fruit, vegetables, lucerne and grains. In this rotation a grain crop, followed by lucerne for six years, replaces a vineyard. Besides the normal pest control reasons to rotate, lucerne accumulates soil nitrogen, from which peaches (the fourth crop) benefit more than most. After peaches, the field is returned to wine grapes. Farmers no longer use the full rotation, but still believe that it is good to replace wine grapes with stone fruit. Peaches are more common in Robertson than Worcester because its slightly drier climate suits stone fruit better, and Robertson is closer to the canning factories in Ashton. Several Worcester farmers said that they are keen to expand into peaches, but that they are unable to get production quotas from the canning factories.

[2] A copy of the questionnaire can be downloaded from www.uct.ac.za/depts/cssr/pubs/html

*Table 1: Descriptive statistics of Robertson and Worcester wine farms in 2003*

| *Variable* | *Mean (standard deviation) Robertson* | *Worcester* | *Different Means T statistic** |
|---|---|---|---|
| Respondent age (3 = 30 – 39 years) | 3 | 3 | mode |
| Education (2 = 12 – 14 years) (3 = 15 – 17 years) | 2 | 3 | mode |
| Cultivated area (hectare) | 85 (67) | 101 (64) | -1.07 |
| Total crop (ton) | 1 330 (1 083) | 1 453 (1 034) | -0.51 |
| Wine grapes (ton) | 907 (870) | 1 240 (946) | -1.63 |
| Wine grapes (%) | 64.84 (24.73) | 86.15 (20.33) | -4.17* |
| Wine grapes+peaches+apricots (%) | 87.70 (22.40) | 92.37 (17.50) | -1.03 |
| Number of tractors/farm | 5.66 (3.23) | 6.03 (4.03) | -0.44 |
| Number of grape harvesters/farm | 0.38 (0.48) | 0.42 (0.44) | -0.31 |
| Fulltime equivalent workers/farm | 34.80 (23.95) | 36.81 (23.74) | -0.37 |
| Total cost (R/ton) | 1 612 (1 256) | 1 517 (988) | 0.36 |
| Labour cost (R/ton) | 369 (348) | 304 (142) | 1.09 |

* statistically different at 95% confidence
n = 79

The rush into peaches was caused by what farmers describe as "a serious dip in the wine industry". During 1999 and 2000 the average real wine price fell by 6% and 8% respectively, compared to the previous year (SAWIS, 2003). Canned fruit is a low cost alternative to wine grapes. Fruit for the fresh market and even dairy farming require larger capital investments.

In August 2003 both districts used the same number of tractors and grape harvesters, but harvesters were slightly more widely used in Worcester (68% use harvesters) than in Robertson (42% use harvesters) during the 2003 harvest. Total cost of production for the 2002/03 financial year was R1517/ton in Worcester and R1 612/ton. Wages and salaries comprised about a quarter of the cost. On average there is no difference in total cost or labour cost between Worcester and Robertson.

*Table 2: Composition of the work force in 2003*

| | *Mean (standard deviation)* | | *Different Means* |
|---|---|---|---|
| *Staff category* | *Robertson* | *Worcester* | *T statistic** |
| Regular men | 18.26 | 19.49 | -0.43 |
| | (12.5) | (12.67) | |
| Wives of regular workers | 12.03 | 13.49 | -0.74 |
| | (8.31) | (9.11) | |
| Casuals & contractors (full time equiv.) | 4.53 | 3.84 | 0.44 |
| | (8.05) | (5.63) | |
| Total staff | 34.80 | 36.81 | -0.37 |
| | (23.95) | (23.74) | |

* statistically different at 95% confidence
n = 79

The composition of the workforce appears in Table 2. On average, farms employ the same number of staff from the same categories in Worcester and in Robertson. Men in fulltime permanent positions (regular men) are the most important and clearly defined labour category. All farms employ them, and many farmers think of their regular men as their "real" workforce. In the past, all permanent staff lived on the farm, and there were often rules requiring wives to work too (especially during the harvest) to justify the cost of housing. While

labour legislation has formalised the relationship between employers and their regular men, old rules frequently still apply to the wives of permanent workers.

At present workers' wives still represent about 35% of the labour pool on farms in the Breërivier valley, if one uses a straight headcount, but they may actually do far less work. They enjoy all the benefits of permanent staff, but they are not really treated as fulltime workers. During the harvest they work alongside their men, often for long hours, but even then they are let off early to prepare dinner. They are also excused from heavy work such as carrying loads and picking fruit from ladders. Women work shorter hours in winter, just assisting with pruning in many cases. On some farms wives are offered half-day positions in winter so that they do not have to work outside on cold wet mornings. Other farms have fulltime winter work, but a policy of "no work no pay" on rainy days for women. Still others do not employ women at all outside the harvest season.

Farmers say that they "make work" to keep women busy so as to secure them for the critical harvest period but also to raise household income. Farmers in Limpopo say the same thing (Stoltz, 2003). Working conditions of women often reflect the view of the owner about the productivity of women workers. Employment of women who already work short hours is probably more vulnerable to legislated wage increases than those working fulltime year round.

Contracted and casual labour are fluid categories[3]. Both refer to staff living off the farm and hired for a specific task. The Western Cape has a long history of coloured independent contractors, who have always performed skilled services in the fruit industry. Many of them come from small towns like McGregor or mission station communities such as Genadendal, but little else is known about them. In the past, farmers often fetched migrants for the harvest from the Karoo and parts of the Eastern Cape. As migrant families settled on Western Cape farms, and the harvest extended as crops diversified, more casual labour was hired locally on a daily basis. Twenty years ago, the typical casual was either an old age pensioner or a housewife, often a woman pensioner. Today, due to increasing unemployment, casuals are as likely to be men as women, and young as old. Many casual labourers and contractors used to be farm workers.

Contractors operate in teams recruited and supervised by an "aannemer" (to "neem aan" or "contract for" performed work). The farmer pays the contractor who then pays his staff, in turn setting aside a certain percentage for his own services such as supervision, transport and sometimes food supplied. Most

[3] There is anecdotal evidence of regular workers living in nearby towns and commuting but this group is still insignificant.

contracted staff are men. Contractors work in particular areas, returning year after year to do the same task for the same farmer at about the same time of year.

Pay rates for contractors vary. Farmers who pay more interpret this as reflecting a difference in quality of supervision and skill. Others compete purely on price for tasks that require no skills and are exhausting, such as digging irrigation ditches. The use of contractors, even for regular vineyard tasks, is increasing. In 2001, 53% of farmers in the Western Cape used contractors (Du Toit, 2003). In 2003, 71% of Robertson farmers and 83% of Worcester farmers employed temporary workers. Farmers see contractors as a cheaper option than regular labour, but are worried about quality in this growing market. Some refuse to use contractors while others limit them to tasks that are easily monitored.

The farmer or his driver hires casual labour on a daily basis, usually from the closest town or even neighbouring farms. No formal contract exists. A farmer explained it as follows:

> "*You just drive your truck to the "lokasie" and they get on the back. They do not even ask what you are paying. Some days you want fifteen people and come away with fifty. They want to work. They are desperate for it*."

The level of desperation depends on the time of year. In February the competition for casual workers is fierce, but in winter reported food insecurity doubles (Du Toit, 2003). Farms often have a core of "regulars", but casuals follow the best prospects. They do piecework, and while piecework rates are much the same, daily earnings vary with the state of the crop. Casuals seem to have good information about where to find the best picking. When earnings are small, at the beginning and end of the harvest of a particular field, farmers will raise the average earnings above the going piece rate, ensuring that casuals return next time. Still, there is a huge variation in daily earnings. Good pickers often earn up to four times as much as the lowest paid. There are also other strategies, such as planting early varieties to be first in the market and establish a track record as a good employer.

Farms tend to employ either casuals or contractors, and only on rare occasions both. In Robertson, 29% of farms do not use casuals or contractors and in Worcester 17% of farms use only permanent labour, but there is no statistical difference ($T = -0.30$) between the two districts. Whether for economic reasons, such as higher wages, or non-economic reasons, as Simbi and Aliber (2000) and Du Toit (2003) claim, the casualisation of farm labour is likely to continue.

Wage rates were recorded directly as well as calculated from labour cost in the previous financial year. The difficulty with the second approach is that, while

total labour spending is accurate, calculating fulltime labour equivalents is almost impossible. Exact numbers of casuals or contractors and the time they work are rarely recorded. An accurate record of the hours worked by workers' wives may exist, but is time consuming and difficult to extract from farm records. While the risk of inaccuracy in asking directly about wages is obvious, the alternative is no better. Both measures are reported in Table 3. It gives the reported cash wage separately for regular men who receive the highest (top end) and lowest (bottom end) wage on that farm. The same categories are recorded for women.

The average 2002 calculated cash wage of R865 per month in Robertson and R900 in Worcester is 25% higher than the 2001 provincial average of R700 per month (Department of Labour, 2001). Two thirds of farms already paid an average wage of more than R800 in 2002. Men at the top end earned about R1 000 per month in both districts. Their 2003 wage raise was the same as any other year. Women at the high end earned about 40% less than their male counterparts in both districts. A national survey shows a far larger difference (Department of Labour, 2001). Women in Worcester received a 16% raise to bring their wages up to the minimum wage level. At the bottom end of the scale, Robertson paid significantly more than Worcester, but raises of 18% and 25% respectively brought the monthly earnings of men and women in Worcester in line with workers in Robertson. Unlike in 1993 when Robertson paid much less, Worcester was slightly behind Robertson in 2002. The average raise in Robertson was between 5% and 6%, indicating that the district was practically unaffected by minimum wages set at R650 per month.

The Sectoral Agreement for agriculture allows employers to deduct 10% each for housing and food provided free of charge to workers (Department of Labour, 2002). No examples were found in this study of regular meals served to workers, but nine out of ten farms provided free housing, and were thus allowed to deduct 10% of the stipulated wage. The housing deduction effectively lowers the statutory minimum cash wage to R720 per month in Worcester and R585 in Robertson. Many farmers in Worcester invoke the housing deduction in order to limit the amount by which cash wages had to be increased.

Top-end male workers' rates of pay comply with stipulated minima in both districts. The wages for bottom-end males also comply if the housing deduction is brought into play. For bottom-end males, the average Robertson farm could comfortably be reclassified as category A and pay R800 per month. Two thirds of Robertson farms already pay their bottom-end males more than R720 per month, while 39% pay more than R800 per month. One in four bottom-end males in Worcester is paid R720 and 33% receive more than R800 per month.

*Table 3: Minimum monthly wage compliance of regular workers*

| *Wage category* | *Mean (standard deviation) Robertson* | *Worcester* | *Different Means T statistic** |
|---|---|---|---|
| *Highest paid man on a farm* | | | |
| February 2003 – R/month | R988 | R1 022 | -0.41 |
| | (133) | (389) | |
| August 2003 – R/month | R1 037 | R1 031 | 0.07 |
| | (338) | (408) | |
| Avg. increase in 2003 | 5.58% | 3.03% | 0.49 |
| Farms above R800 in Aug. 2003 | 79% | 83% | |
| *Lowest paid man on a farm* | | | |
| February 2003 – R/month | R739 | R644 | 3.67* |
| | (127) | (102) | |
| August 2003 – R/month | R777 | R763 | 0.59 |
| | (109) | (104) | |
| Avg. % increase in 2003 | 6.47 | 17.84 | -2.27* |
| Farms above R800 in Aug. 2003 | 39% | 33% | |
| *Highest paid woman on a farm* | | | |
| February 2003 – R/month | R634 | R635 | -0.01 |
| | (239) | (244) | |
| August 2003 – R/month | R652 | R743 | -1.40 |
| | (247) | (309) | |
| Avg. % increase in 2003 | 5.12 | 15.55 | -1.82 |
| Farms above R800 in Aug. 2003 | 11% | 21% | |
| *Lowest paid woman on a farm* | | | |
| February 2003 – R/month | R579 | R509 | 2.88* |
| | (114) | (95) | |
| August 2003 – R/month | R606 | R646 | -1.21 |
| | (133) | (156) | |
| Avg. increase in 2003 | 6.46% | 24.62% | -2.97* |
| Farms above R800 in Aug. 2003 | 3% | 11% | |
| *Average worker* | | | |
| 2002/03 financial year | R865 | R900 | -0.58 |
| | (257) | (277) | |
| Farms above R800 in 2002 | 64% | 66% | |

* statistically different at 95% confidence

n = 79

For women a very different picture emerges. Table 3 shows that in August 2003 only one in five of the highest paid women on Worcester farms earned R800 per month or more. Only 11% of bottom-end women in Worcester and top-end women in Robertson earned R800 per month or more. Among the lowest paid women on Robertson farms only 3 out of a hundred received more than R800 per month. If the housing deduction is taken into account, the percentage of Worcester farms that pay their top-end and bottom-end women at least R720 per month, raises to 55% and 45% respectively. Only one out of three women in Robertson earned R650 per month or more, and two out of three earned R585 per month or more in August 2003.

Legislation requires workers to be paid at least the monthly wage if they work more than 27 hours per week, and at least the hourly rate if they work 27 hours or less per week (Department of Labour, 2002). For people working more than 27 hours, but less than 45 hours per week, the hourly rate thus increases above the minimum. In the extreme case, for a person working 28 hours, the hourly rate increases from R4.10 to R6.64 in category A districts. This arrangement caused much dismay, since many workers' wives routinely work more than 27 hours and less than 45 hours per week. All women were found to earn the minimum hourly rate (R3.33 in Robertson and R4.10 in Worcester) but, on average, low-end women in Worcester earned R646 per month, which is less than the monthly minimum. This is despite an increase of 25% from 2002 to 2003.

The contradiction between receiving the stipulated minimum hourly rate and not receiving the stipulated monthly minimum rate is due to the different strategies followed by employers. Some farmers tried to increase the hours worked by workers' wives, but without success. These wives are paid R4.10 per hour and work less than 45 hours, thus earning less than the monthly minimum wage. Other farmers restricted hours for female workers to 27 hours per week, or have stopped using them during winter. If this trend in labour deployment continues, the average monthly wage for women workers at the bottom end of the scale may be even lower in 2004.

Respondents are generally in favour of paying a "living wage", but many object to the valuation of in-kind benefits. Table 3 does not reflect the value of the comprehensive set of in-kind payments or benefits that farm workers regularly receive as part of their pay. A recent national survey published by the Department of Labour (2001) shows that 83% of farm workers live on farms and that only four out of five of those workers pay rent. In three out of four cases the owner pays for the maintenance of worker cottages. Some of the services, like housing, are free of charge while others, like medical costs, carry a 50% employer subsidy. Table 4 shows that very few farmers deduct 10% for housing.

Many workers receive free funerals, clothes, electricity, childcare and grocery credit. Employers are beginning to reduce handouts and make workers pay for services, but not all started with the same service. A Worcester farmer already sources all his permanent workers from town. He pays for transport but gives no other benefits. Workers travel in their own time.

*Table 4: Services given free of charge to farm workers*

| | *% Farms that provide free or subsidised services* | |
|---|---|---|
| *Benefit* | *Robertson* | *Worcester* |
| Housing | 97 | 90 |
| Electricity | 66 | 78 |
| Protective clothes and shoes | 100 | 90 |
| Transport | 68 | 41 |
| Doctors visits | 42 | 39 |
| Funerals | 71 | 88 |
| Child care | 45 | 48 |
| Grocery credit | 39 | 41 |

In this paternalistic system farmers (or for that matter workers) rarely know what a particular service, for example childcare, costs (Dept of Labour, 2001). They simply provide it when they deem it necessary. As relationships become more formal and all payments are quantified, farmers are less inclined to do what they have always done.

One farmer explained:

> *"I'm now going to make them pay. I am not their father anymore. The government is their father. Mbeki can pay. But he won't look after them. I will still have to do it. They will still come running to me if someone needs to be buried."*

Someone else said:

> *"I'm their financial adviser. I see to it that they save. I negotiate on their behalf with the furniture shops. Those places rip them off. My people will NOT buy on credit from a furniture store. Over my dead body. I do not care what the law says."*

The issue of grocery credit is particularly controversial. In the days that transport to towns was still difficult to obtain, groceries were sold to workers on credit two or three times a week. The system still exists on 40% of farms in the Breërivier valley. Goods are generally on sale at cost (although Du Toit, 2003, claims supermarkets in Ceres are cheaper than farm shops), no interest is levied and goods are sold only to workers. Two clauses in the Sectoral Agreement could apply to this arrangement (Department of Labour, 2002). Grocery credit can be seen as an "amount loaned or advanced to the worker by his employer". In this case the amount is restricted to 10% of the cash wage. Alternatively, grocery credit can be viewed as an amount "paid to a third party" in which case the 10% restriction does not apply, but a written request is required.

Grocery credit typically amounts to more than 10% of the wage, often up to half of the week's earnings. About 40% of farmers admitted to breaking the law in this respect in August 2003. One particularly irate respondent made no bones about his position and his workers' support for his position:

> *"Send those inspectors! I will get my volk to donner them!"*

Benefits are notoriously difficult to value accurately in order to quantify total remuneration. Geoff Antrobus etimates that benefits contribute as much 43% of a farm worker's income in the Eastern Cape (Botha, 2003). In KwaZulu-Natal, Newman *et al*. (1997) report that benefits made up about half of a worker's pay in 1997. They valued housing at R67 per month. The current value of similar housing would be R98 per month, almost a quarter more than the maximum permitted deduction. Most farmers in the Breërivier valley do not know with accuracy what it costs them to build and maintain workers' cottages. Some estimate that it costs them between R150 and R300 per month. A new house of R80 000, if financed and maintained, costs R600 per month over 20 years. The quality of worker housing varies a lot, but it can be of better quality than RDP housing (Du Toit, 2003). It is even harder to value free credit and financial management, but these services could cause a large welfare loss if farmers stopped providing them. Worker families would lose out directly and place an additional burden on social safety nets in town.

# Employment elasticity of farm labour

Estimated price elasticity of demand for farm labour allows one to predict the likely effects of wage increases. A double log specification was used to calculate a constant price elasticity. Variation in cross-sectional employment (fulltime labour equivalents in August 2003) was explained by the calculated average

wage in 2002. Farm size (measured as total tons produced in 2003) and intensity of mechanisation (tractors per ton) also explained some variation.

Simbi and Aliber's (2000) theory that a farmer's attitude may affect his willingness to employ people was tested but rejected. The models in Table 5 include three attitude variables that turned out to be insignificant regardless of specification. Perceptions about labour legislation in general (lableg), rising minimum wages (minwag) and security of tenure (secten) were measured on a five point Likert scale where 5 = very great concern and 1 = no concern. A negative relationship between employment and the perception variables would support Simbi and Aliber's theory. The sign on labour legislation was negative but not significant. The other signs were positive, but also insignificant.

Economic variables seem to dominate farmers' employment decisions. Adjusted $R^2$'s of 0.79 to 0.84 indicate a good fit, while the White and Jacque-Bera statistics indicate the absence of heteroskedasticity and the presence of a normal distribution. Wage and farm size were highly significant determinants of employment. The crop dummy for table grapes and other labour-intensive activities is mildly significant. The intensity of mechanisation is also important.

Alternative specifications for mechanisation were tested. Tractors are a crude measure of mechanisation on which good data is easy to find. Fuel data, while more accurate (tractors can be idle), is more difficult to obtain at the farm-level. Farm size effects were isolated from these by expressing them per ton fruit grown. The number of grape harvesters used is an obvious measure for the level of mechanisation on wine farms since harvesters directly replace labour (one respondent claims 17 workers displaced), but this specification ignores non-harvest labour. Labour and harvesters are clearly substitutes, but it is not obvious that tractors (or fuel) and labour are substitutes on wine farms.

Grape harvesters are self-propelled machines that shake berries off the vines. Oxidation, leading to poor quality wine, occurs at a higher rate when it is hot or when the berries are broken. Harvesters are a bit of a mixed blessing; they break more berries but can bring in the crop during early morning while it is still cool. Depending on the number of vineyards involved and the preferences of the vintner, some wineries encourage the use of harvesters while others prefer handpicked fruit. Some farmers use a harvester to free up their workers to pick other crops. Others bought harvesters as insurance against unreliable labour. Given this ambivalence about automatic grape harvesters, it is not surprising that the harvester variable is not significantly different from zero, but carries the expected positive sign. The harvester variable counts the number of grape harvesters per farm without adjusting for farm size, since very few grape harvesting machines are used to full capacity.

*Table 5: Regression results – dependent variable = fulltime labour equivalents*

| | *Coefficients and (T statistics)* | | | | | |
|---|---|---|---|---|---|---|
| *Variable* | *R8* | *R13* | *R16* | *R3* | *R5* | *R9* |
| Constant | -1.63* | -1.93* | -1.30* | -2.40** | -1.84* | -1.69* |
| | (-2.03) | (-2.02) | (-1.76) | (-2.69) | (-1.50) | (-1.71) |
| ln(wage) | -0.30** | -0.29** | -0.28** | -0.29** | -0.30** | -0.29** |
| | (-3.08) | (-3.05) | (-2.75) | (-2.97) | (-3.17) | (-3.06) |
| ln(size) | 0.77** | 0.80** | 0.83** | 0.82** | 0.77** | 0.90** |
| | (17.05) | (13.77) | (12.43) | (14.15) | (17.24) | (11.37) |
| ln(tractor) | | | 0.35** | | | 0.18 |
| | | | (3.25) | | | (1.56) |
| ln(fuel) | 0.41** | 0.41** | | 0.45** | 0.44** | 0.39** |
| | (4.77) | (4.83) | | (5.09) | (5.05) | (4.08) |
| ln(harvest) | | -0.01 | | -0.01 | | -0.01 |
| | | (-0.85) | | (-1.26) | | (-1.47) |
| Cropd | 0.21* | 0.20* | 0.33** | 0.20* | 0.21* | 0.18* |
| | (1.99) | (1.91) | (3.20) | (1.91) | (2.03) | (1.76) |
| ln(minwag) | | | | 0.08 | | 0.09 |
| | | | | (1.21) | | (1.15) |
| ln(lableg) | | | | | | -0.06 |
| | | | | | | (-0.66) |
| ln(secten) | | | | 0.08 | 0.10 | 0.10 |
| | | | | (1.22) | (1.55) | (1.43) |
| n | 73 | 73 | 76 | 73 | 73 | 73 |
| Adjusted $R^2$ | 0.81 | 0.81 | 0.79 | 0.82 | 0.81 | 0.84 |
| White | 1.79 | 1.60 | 1.70 | 1.62 | 1.22 | 1.30 |
| Prob of rejecting | 0.10 | 0.12 | 0.12 | 0.11 | 0.30 | 0.23 |
| Jacque-Bera | 4.32 | 4.22 | 7.66 | 3.99 | 5.35 | 6.53 |
| Prob of rejecting | 0.12 | 0.12 | 0.02 | 0.14 | 0.07 | 0.04 |

** significant at 1% * significant at 10%

The expected sign on tractors is negative if tractors and labour are substitutes. The substitution hypothesis is the main cause of the fears that minimum wages set at binding levels will cause unemployment. If there is no evidence of substitution, there is no reason to expect that farm workers will lose their jobs when a binding minimum wage is imposed. A smaller number of tractors per unit output indicates a lower mechanisation level and hence a higher labour input. The fuel variable works the same way.

The data rejects the mechanisation hypothesis in wine grape production. Tractors and fuel are highly significant determinants of labour demand, but carry a positive sign. The results show that a higher intensity of mechanisation causes more employment, regardless of whether one uses the tractors or fuel variable. Where the fuel and tractors variables are used together, the number of tractors is not significant. This is not surprising since there is really no opportunity for people to do the work of tractors on wine farms. Tractors are used for general transport and to spray vineyards. They are not used in pruning, irrigation, or fertilisation and are used regardless of whether grapes are picked by hand or by machine. If tractors are used to spray herbicides on work rows, canopies still have to be lifted by hand before the tractor can enter.

The demand for farm labour is price inelastic ($\eta = 0.28 – 0.30$) in the short run. If the historical wage increase of between 3.1% and 4.7% applies, the expected job losses will be 0.9% and 1.4% per year.

# Evidence of job shedding

The immediate response to the institution of minimum wages has been mild in both districts. When asked how minimum wages have affected them to date ,farmers routinely said: "*Not much*" or "*I already paid more than the minimum wage*". If pushed, they occasionally admitted to having had to rearrange hours of work, or that they discontinued in-kind benefits like free electricity or free accommodation. Some farmers stopped employing women, while others increased the hours of women staff or used more casual workers.

Table 6 reports the average number of regular workers that joined and left farms between September 2002 and August 2003. Expressed as a percentage of fulltime labour equivalents, the turnover measured as people leaving the farm amounts to 3% in Robertson and 5% Worcester. Both districts experienced a net loss of about 1% of their fulltime labour equivalents.

*Table 6: Farm-level labour turnover in number of regular workers in 2002/03*

| *Category* | *Mean (standard deviation) Robertson* | *Worcester* | *Different Means T statistic** |
|---|---|---|---|
| Hired – Youths | 0.49 | 0.37 | -0.71 |
| | (0.79) | (0.73) | |
| Others | 0.64 | 1.63 | -2.63* |
| | (0.99) | (2.15) | |
| Fired – Disciplinary hearings | 0.46 | 0.51 | -0.22 |
| | (1.05) | (1.00 | |
| Resignations, retirements etc | 1.10 | 1.88 | -1.79 |
| | (1.05) | (2.51) | |
| Net change in employment | -0.44 | -0.39 | -0.12 |
| | (1.45) | (2.04) | |

* significant at 5%

A 1% loss in employment is consistent with a 3% increase in wages. While the data for category increases are available, the wage categories for workers leaving and joining the farm are not known. Likewise, we do not have an average wage increase with which to compare the net employment effect. However, the very low rate of job shedding supports the farmers' claim that they did not retrench anybody. Unlike Indonesia, where small firms are reported to be more severely impacted by minimum wages (Rama, 2001), there is no evidence that smaller farms shed more jobs than large firms. Table 6 reflects only the turnover in employees living permanently on the farm, and does not account for the lower number of hours worked by the women.

Despite evidence that no one was retrenched, several farmers said that they are expanding production without employing more permanent labour. In the extreme case of one farm the area planted tripled without any additional permanent workers being hired. Some farmers will handle the expansion through increased outsourcing while others plan to buy more harvesters or mechanise pruning, but overall the intended net effect is to economise on labour input at the margin.

# Marginal workers

The largest group of marginal workers are the wives of regular men. Workers' wives and daughters are accommodated, but single women are not tolerated.

> *" … it is almost impossible for single women to obtain employment and housing on farms, with housing being reserved for men who are still regarded as the traditional head of the household."*
>
> South African Human Rights Commission, 2003

Women earn between 18% and 61% less than men per month, but they work shorter hours. The gap is much larger at the top end than at the bottom end of the wage scale, although it seems as if the Sectoral Agreement made the gender gap smaller for both high-paid and low-paid workers in Worcester. This effect was much less evident in Robertson where the statutory minimum wage was not really binding. At the moment bottom-end females receive on average about 85% of the monthly wage of bottom-end males. But there is evidence that minimum wages caused women to work less. The extreme reaction of farmers is to retrench all females and replace them with additional permanent males or contractors. This strategy was encountered in two cases only. The cost of housing possibly prevents more farmers from using this strategy.

In the past, semi-retired workers, widows, and people with disabilities were given light duties around the yard at half pay. Farmers currently say that they cannot afford these charity cases any longer and that they are helping the old and disabled to apply for government grants in some cases. Others have stopped employing school leavers. Farmers claim that youths are not as productive as adults. On some farms, young boys serve an apprenticeship with the women, and are paid women's wages. They graduate to the men's teams after six months if they prove themselves. There is some evidence in Table 6 that the level of the minimum wage affects the number of school leavers hired, but the difference is not statistically significant. There is anecdotal evidence that girls are more severely affected by the cutbacks than boys. Some claim that many girls fall pregnant in order to qualify for the child welfare grant because they have lower employment prospects. One very upset farmer said:

> *"We should not pay [the girls] to have babies. We should pay them to pass school standards instead."*

# Conclusion

After six months, most farm workers in the Breërivier valley receive the agricultural minimum wage. Despite vocal objections earlier this year, farmers have adjusted quickly, partly because wages did not need to be increased by much. Robertson was not affected at all by the R650 per month minimum that applies to category B towns, but would have been more affected if it were designated category A. Worcester, being almost identical to Robertson, was certainly affected. Job losses in the short run are hard to pinpoint, but wage increases of between 16% and 25% were needed to bring workers at the lower end of the wage spectrum in line with statutory levels.

Wages represent about a fifth of the average farm's costs. The immediate financial implications of wage increases for farm operations will only emerge during the next financial reporting cycle, but are likely to be small compared to the potential impacts of exchange rate volatility in what are overwhelmingly export industries. When the Rand is weak, or commodity cycles high, farmers are not likely to oppose statutory minimum wages, but when the farm gate prices fall as they have done in the wine industry in 1999 and 2000, minimum wages may have an entirely different effect on farm profitability. In the longer term, financial difficulty could cause farmers to fall behind on maintenance of vineyards, and might ultimately shrink the wine industry.

Minimum wages benefit some workers' wives, but not all, and generally disadvantage other marginal workers. The Sectoral Agreement only permits two levels of employment, fulltime defined as 45 hours per week and halftime defined as 27 hours or less per week. This definition does not reflect the seasonality of labour demand in agriculture, creating a rigid system that employers are still coming to terms with. Insofar as the wives of regular workers were used in the past to flatten labour peaks, they bear the brunt of the new rigidities, with many losing at least part of the hours they have worked in the past, or being forced to work hours that they do not want to work.

Jobs for youth might also be sensitive to the level of the minimum wage, but no concrete evidence was found. The old and infirm are likely to be pushed onto the social safety nets.

The most important consequence of statutory minimum wages is not a direct loss of jobs, but a slow-down in job creation for permanent workers living on farms. Regular workers appear to be contributing a shrinking portion of total labour, and are losing some of the benefits associated with living on the farm but is not clear to date if minimum wages will speed up this process of labour shedding. The value of benefits lost is also not yet known.

While the immediate effects are apparent on the surface, minimum wage determination was another measure introduced by the government, which leaves farmers slightly more insecure than before. There is no evidence in this study that farmers who are more concerned about labour costs are currently employing fewer people, but such effects may still emerge in the next few years. The legislation has increased labour costs slightly, and more concerned farmers will now think much harder than before about net job creation with expansions of production.

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The Social Surveys Unit (SSU) promotes critical analysis of the methodology, ethics and results of South African social science research. One core activity is the Cape Area Panel Study of young adults in Cape Town. This study follows 4800 young people as they move from school into the labour market and adulthood. The SSU is also planning a survey for 2004 on aspects of social capital, crime, and attitudes toward inequality.

The Southern Africa Labour and Development Research Unit (SALDRU) was established in 1975 as part of the School of Economics and joined the CSSR in 2002. SALDRU conducted the first national household survey in 1993 (the Project for Statistics on Living Standards and Development). More recently, SALDRU ran the Langeberg Integrated Family survey (1999) and the Khayelitsha/Mitchell's Plain Survey (2000). Current projects include research on public works programmes, poverty and inequality.