Have Minimum Wages Benefited South Africa's Domestic Service Workers?

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Introduction and Summary

In September of 2002 South Africa's roughly one million domestic workers – about 840,000 predominantly African and Coloured women who work as housekeepers, cooks and nannies, and another 180,000 men who work primarily as gardeners[1] – were granted formal labor market protection, including the right to a written contract with their employers, the right to paid leave, to severance pay, and to notice prior to dismissal (Department of Labour, 2002). Employers were also required to register their domestic workers with the Unemployment Insurance Fund (UIF) and to withhold UIF contributions from their paychecks; (since April of 2003 domestic workers have been entitled to unemployment benefits). In November of 2002, a schedule of minimum wages, including time-and-a-half provisions for overtime work, went into effect. The minima were set *above* the median hourly wages that prevailed at the time, making this a significant intervention in the domestic worker labor market.

This paper attempts to determine if these regulations have had any effect on wages, employment levels, hours of work, and the conditions of employment. I find that the regulations do appear to have raised wages: Average nominal hourly wages for domestic workers in September of 2003 were 23% higher than they had been in September 2002, while for demographically similar workers in other occupations the nominal wage increase was less than 5%. Econometric evidence supports the conclusion that the wage increases were caused by the regulations, since the largest increases are seen in places where the greatest number of workers were initially below the minimum wage.

The regulations also appear to have had an effect on some of the non-wage conditions of employment. The proportion of domestics who report having a written contract with their employer rose from 7% in February of 2002 to 25% in September of 2003; and the number who report UIF deductions rose from 3% to 25%.

I find that the regulations are associated with a statistically significant reduction in hours of work among the employed, which fell by about 4% for domestic workers, but were essentially constant for workers in other occupations. Domestic worker employment levels also appear to have fallen, by roughly 3%, but the decrease was not statistically significant, nor did I find econometric support for the proposition that it was causally connected to the wage changes. Instead, the decrease in employment seems to parallel the rate of decline of

[1] These estimates are based on the September 2002 Labour Force Survey. Domestic workers represent roughly 9% of all formal and informal employment in South Africa.

the employment-to-population ratio for demographically similar workers in other occupations.

The net effect of these changes in wages, hours, and employment was that domestic worker earnings per capita grew in real terms from September of 2001 to September of 2003, while earnings per capita from work in other occupations by poorly educated African and Coloured employees did not keep pace with the CPI.

These findings, although preliminary and subject to several significant caveats, suggest that the minimum wage for domestic workers has contributed to raising the purchasing power of one of the lowest-paid segments of the population.

Data Issues

The primary data come from the five most recently published waves of the semi-annual Labour Force Survey, undertaken from September of 2001 through September of 2003. They include two waves prior to the regulations' effective date, one on the cusp, and two after. The surveys cover roughly 30,000 households each, using a rotating panel design[2], and yield about 2400 to 3100 domestic workers per wave. A detailed set of questions relating to labor force status and earnings is included; coverage of non-labor income and consumption, however, is lacking, making it hard to generate reliable poverty estimates. Also lacking are data on payments in kind, which can be of considerable importance to domestic workers. Given that the new regulations place lower limits on wages, and upper limits on the degree to which payments in kind may be substituted for wages, we might expect a considerable reshuffling of the compensation package to occur. The inability to track this substitution is one of the key limitations of this work.

No fewer than four separate questions may be used to define domestic workers. Respondents are first asked a series of yes/no questions to identify all forms or labor force participation, of which one is: "In the last seven days, did …do any work as a domestic worker for a wage, salary, or any payment in kind?" Later, employed respondents are asked their occupations, and domestic workers are assigned various codes; next a pair of questions are used to establish an industry code, of which domestic work is again one; and a final question, designed primarily to elicit responses from unpaid workers, includes the option "Working for one or more private households as a domestic employee, gardener or security

[2] The panel nature of the dataset has yet to be exploited because IDs are not invariant across waves, making it difficult to match people over time.

guard." These questions are independent, and correlate well but not perfectly. In order to narrow the focus to those people who I could be confident were actually covered by the new regulations, I defined my sample to include people who reported having done domestic work in the past seven days, *and* reported working for a private household as a domestic, gardener or security guard, *and* were coded as belonging to the domestic "industry". I then excluded security guards (using the relevant occupation code) who are covered under different labor regulations. The consequences of different sample definitions are discussed below.

Starting with the March 2003 survey, new population weights, keyed to the 2001 census, have been distributed with the LFS datasets. These yield population totals that are similar to those given by the prior 1996-census-based weights, but with a different age distribution: the share of the population under age 15 falls from 0.35 in the September 2002 survey to 0.31 in the subsequent two rounds, while the population of working age (15-65) increases its share from 0.61 to 0.64, and the elderly rise by a point, from 0.04 to 0.05. A comparison of employment *levels* before and after the change in weights is thus invalid: it is biased in the direction of obscuring any disemployment effects of the minimum wage. Instead, I compare domestic worker employment-to-population-of-working age ratios; this sidesteps the worst of the age-effects of the change in weights, but it cannot guarantee that other changes in the weighting formula might not have produced artifactual changes in domestic worker employment rates.

Hourly wages are calculated from information on monthly or weekly earnings and hours of work. Earnings data are sometimes available only as categorical intervals (e.g. R501 to R1000); where this is the case, linear regressions of wages against a host of demographic, regional and occupational indicators are used to impute an earnings value, with the constraint that it must lie within the stated interval. Earnings are imputed in this fashion for roughly 8% of the domestic worker sample.

Descriptive Findings

Figure 1 displays the proportions of domestic workers who report that their employers provide paid leave and written contracts, deduct UIF contributions from their checks, and make contributions towards retirement or health insurance funds. With the exception of health insurance contributions, all rates trend upwards after the regulation's effective date of 1 September. In particular, the proportions registered with UIF and having written contracts rose from the 5-10% range to 25%. It is noteworthy that of the two elements *not* required under the new law, namely, pension and health insurance contributions, the former nonetheless increased (perhaps as a spill-over effect of the new regulations?) while the latter remained at near-zero levels. These numbers suggest two conclusions: First, while compliance is far from universal, the regulations do appear to be having an impact on the behavior of many employers. There is no reason to believe that the increase in UIF contributions and the provision of written contracts would have occurred absent the regulations. Second, the employer response appears to have been accelerating since the effective date: things look very different at a lag of one year than after six months, and there is no significant evidence that employers acted in advance of the rule change. Given this lag it makes sense either to treat September 2002 as "before," or to drop it as a borderline observation. In the before/after analysis that follows I treat September 2001 and February 2002 as "before," omit September 2002, and count March and September 2003 as "after." I do this in part because reported domestic employment in September of 2002 was unusually low, as will be shown soon. I suspect this is an anomaly, and do not wish to exaggerate the benefits of the minimum wage by counting this low-employment month as part of the "before" baseline.

Some evidence of possible changes in workplace relations emerges from an examination of the records of the Council on Conciliation, Arbitration and Mediation. From January of 2001 through August of 2002, the number of domestic worker cases referred this organization, the vast majority of which relate to allegations of unfair dismissal, averaged about 760 per month (Figure 2). In the first eight months after the regulations went into effect the average was 50% higher, at 1155 per month. This could reflect an increase in dismissals (a disemployment effect) or a greater awareness on the part of workers of their (increased) rights.

Table 1 reports the sample sizes and basic descriptive means for hourly wages, hours of work, earnings, and the domestic worker employment to population ratio.[3] Domestic workers are defined as explained above and limited to the population of working age (15 to 65); sample weights are applied. Mean hourly wages in September of 2002 stood at R3.29, and an estimated 74% of domestic workers earned less than the soon-to-be-implemented minima.[4]

Mean hourly wages rose by 21.5% comparing the two "before" periods to the two "after" waves. Figure 3 shows that median wages rose as well, and that both rates of growth outpaced the urban Consumer Price Index, implying a rise in real wages. Average hours of work among the employed, on the other hand, appear to have fallen by about 3.8%.

Did the wage increase lead to the hours reduction? As a first test of this proposition, I compare the experience of domestic workers to that of demographically similar workers in other occupations, whose wages did not rise as fast. I restrict the sample to African and Coloured workers with less than a matric (which accounts for 93% of the domestic workers) and plot the results in Figure 4. We see that wages rose faster, and hours fell faster, for domestic workers than for other occupations, which suggests that the two outcomes may be related, a conclusion that is reinforced by regression analysis, below.

The combination of higher hourly wages but a reduction in hours yielded a 18.7% increase in mean monthly earnings (Table 1). Earnings growth was higher for domestic workers than for similar workers in other occupations, whose earnings did not quite keep pace with inflation (Figure 5).

Figure 6 reports Statistics South Africa's published estimates of domestic worker employment. Domestic workers are identified based only on their reported occupation (an open-ended question which is then coded), without cross-checking their type of employer, industry, or related questions. It appears as though domestic worker employment has recently been on a downward trend, falling from about one million in the year 2000 to 875,000 in September of 2002, but that it then rebounded to its prior levels. This rebound, however, is illusory: it is a product of a change in the population weights described above.

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[3] Standard errors of the estimated means (in parentheses) take account of stratification and clustering, as do the tests of significance of the before/after differences. These latter, however, should also be adjusted for the fact that the waves are not independent since they contain a number of overlapping households, which number cannot be known until the ID problems described above are resolved (see Ashenfelter, Deaton and Solon 1986).

[4] The hourly wage minima were set at R4.51 for part-time workers in urban areas; R3.66 for part time workers in rural areas; R4.10 for full time workers in urban areas; and R3.33 for full-time workers in rural areas. In applying the relevant minima, I assume that the LFS urban/rural distinction is the same as the Area A / Area B distinction in the regulations.

Figure 7 address this problem by switching from employment levels to employment-to-population ratios. It reveals that the size of the before/after change in employment depends crucially on the choice of sample definition: my preferred definition ("Activity, Employer, Industry") which errs on the side of caution in identifying affected workers, yields the most negative estimate of the employment change (-3.1%). A more positive picture would emerge (+4.4%) if we define domestic workers more liberally, and count September 2002's poor performance as part of the "before" period. Thus my choice of sample definition should predispose the analysis towards finding a negative employment effect; despite this bias, the econometric support for a disemployment effect is very weak, as argued below.

By analogy with the analysis of wages and hours we can ask whether the change in employment that domestic workers experienced was any different than that experienced by workers in other occupations. The answer is "no", as illustrated in Figure 8, where we see that employment in other occupations declined as a share of the population as well.[5]

Figure 9 plots the net effect of changes in hourly wages, hours, and the employment to population ratio, which together determine the total earnings from domestic work per person of working age in South Africa. The comparison is again with earnings from all other occupations by similar workers. We see that hourly wage gains allowed domestic worker earnings per person to roughly keep pace with inflation, whereas earnings per capita from work in other occupations fell by about 4% in real terms.

Econometric Results

Various econometric approaches may be used to attempt to determine if there is a causal relationship between the minimum wage policies and the outcomes just described. Time series analyses can extend the rudimentary before/after comparisons described above, but we are limited by the short duration of the series (5 waves, leading to just 4 observations if variables are expressed as first differences). More promising is to exploit regional variation in the level of observed wages in relation to the minima, an approach that can be combined with the time series to form a panel analysis. Here I present a pure cross-sectional equation, following Card and Krueger's (1996) analysis of state-to-state variation in the share affected by a change in the US minimum. Table 2 reports the results of a regression of the before/after change in mean log hourly wages against the share of domestic workers who

[5] This does not exonerate minimum wages per se, since it might well be that minimum wages in other occupations contributed to the observed employment decline.

were initially below the minimum (first column). The unit of analysis is the magisterial district, and the positive coefficient implies that regions with more workers below the minimum saw faster wage growth, as would be expected if wages were growing in response to the regulations. Controlling for the change in the total employment to population ratio (a measure of general labor demand) has no effect on the equation.

This result, however, is probably overstated by the presence of measurement error. A region with unusually many erroneously low wage figures would be expected to rise towards the mean in the next period if measurement errors are random, giving the impression of faster wage growth. This effect will be attenuated if wages are averaged over larger regions. A re-analysis at the level of the 18 regional sample strata reduces the coefficient from 0.47 to 0.38, but does not eliminate its statistical significance. In either dataset this relationship is significant whether we weight the data by population size or by the number of domestic workers in each district, or omit the weights altogether.

In the next columns we see evidence of a relationship between the share below the minimum and the reduction in hours of employment. The coefficient implies that if we compare two districts whose shares below the minimum differ by 0.1, workers in the lower paying district would see their wages rise faster (as documented in the previous columns) but would experience a reduction of about 4 hours per month compared to workers in the higher paying district. As before, the magnitude of this result depends on the choice of weights, but its fundamental statistical significance does not.

In the final two columns we see the lack of cross-sectional evidence for an employment effect. The share under the minimum does not predict subsequent domestic worker employment growth or decline, although the overall level of employment growth is a significant predictor (last column). This non-effect obtains in both the magisterial district-level analysis and the stratum-level dataset, and in 21 out of the 22 different equation specifications and weighting schemes I considered.

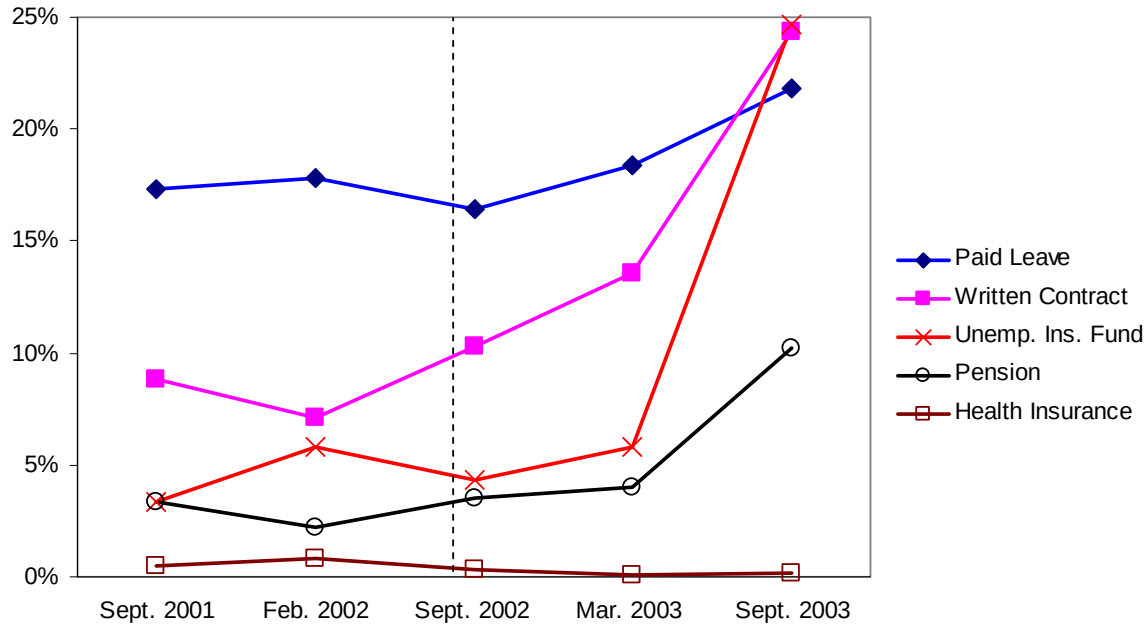
Conclusion

The recent minimum wage regulations are making a difference, despite substantial apparent non-compliance. Reported UIF registration rates stood at 25% as of September 2003, a five-fold increase over the previous year. In Table 1 we see that the estimated share under the minimum has fallen from 75% to 61%, and I present evidence that this is not accidental, but is in fact a response to the regulations. Hours of work appear to have fallen in response, but earnings are up. Moreover, there does not appear to have been a negative employment response, although further econometric work is required to check this conclusion, and to get a better picture of the full distributional impact of these policies.

Figure 1

Trends in Non-Wage Terms of Employment

Domestic workers, ages 15-65



Note: See text for definition of domestic worker sample.

Figure 2

Domestic Worker Complaints to Council on Conciliation, Mediation and Arbitration

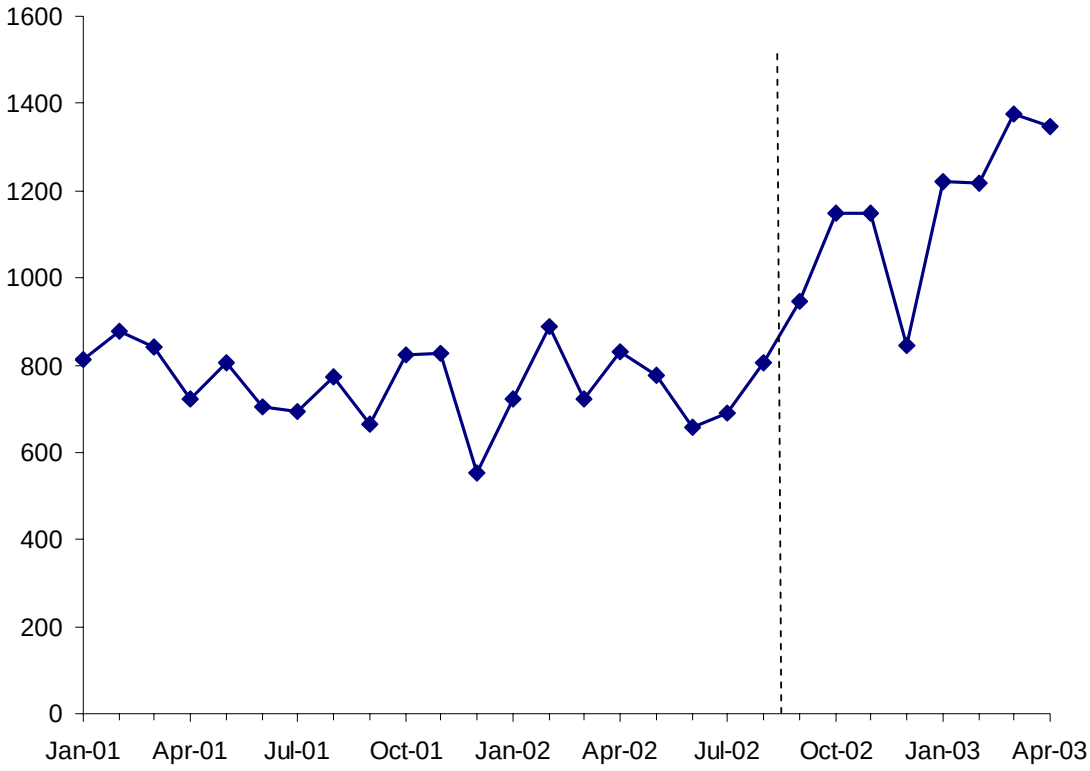


Table 1

Employment, Hours, Wages and Earnings of Domestic Workers, Ages 15-65

	September 2001 *Before*	February 2002 *Before*	September 2002 - - -	March 2003 *After*	September 2003 *After*	%Change *After/ Before*
Sample size (Employed domestic workers)	2821	3097	2561	2484	2430	--
Mean hourly wage (Nominal)	3.23 (0.079)	3.13 (0.079)	3.29 (0.088)	3.71 (0.098)	4.01 (0.095)	21.5%**
Share falling below minimum (‡)	0.75	0.75	0.74	0.67	0.61	--
Mean hours worked per month	184 (1.96)	187 (1.87)	183 (1.98)	180 (1.87)	178 (1.83)	-3.8%**
Mean monthly earnings	505 (10.6)	501 (9.6)	492 (11.4)	576 (15.0)	617 (12.0)	18.7%**
Employment as proportion of population of working age	0.0375 (0.0010)	0.0410 (0.0012)	0.0363 (0.0011)	0.0381 (0.0012)	0.0381 (0.0012)	-3.1%(ns)

Note: Standard errors of the estimated means appear in parentheses; these take account of design effects. Final column reports the percent change from the average of the two "before" periods to the weighted average of the two "after" periods.
(**) indicates the change is statistically significant at the 1% level;
(ns) indicates not significant at 10% level.
(‡) Assumes the "Urban" areas of the LFS coincide with "Area A" in the regulations.

Figure 3

Mean and Median Hourly Wages, Domestic Workers Ages 15-65

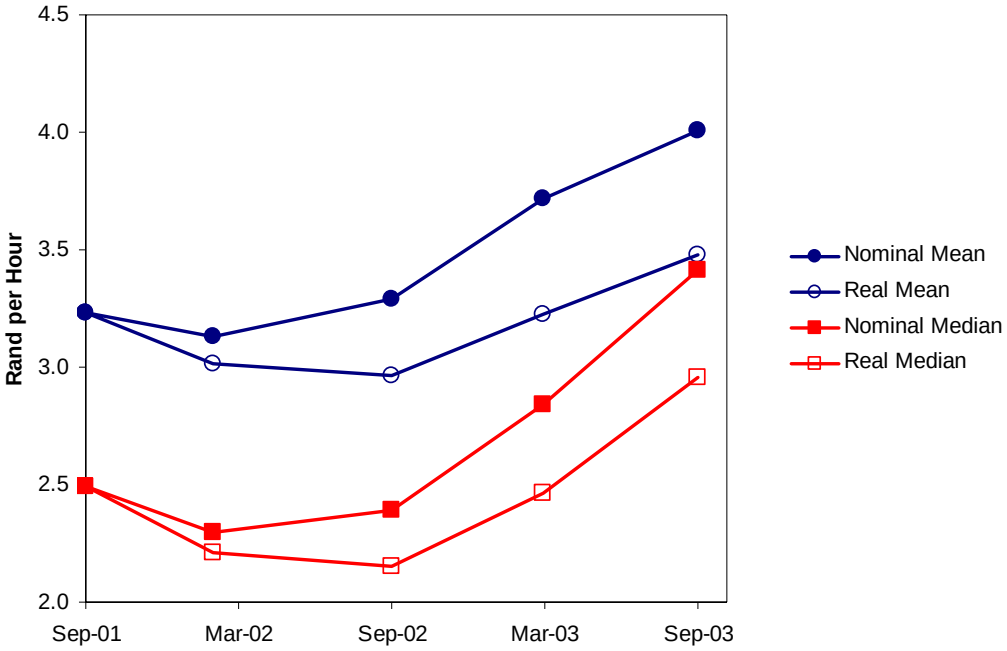


Figure 4

Hourly Wages and Hours of Work

African and Coloured Domestic Workers, Ages 15-65, with Less than Matric Versus Similar Workers in All Other Occupations

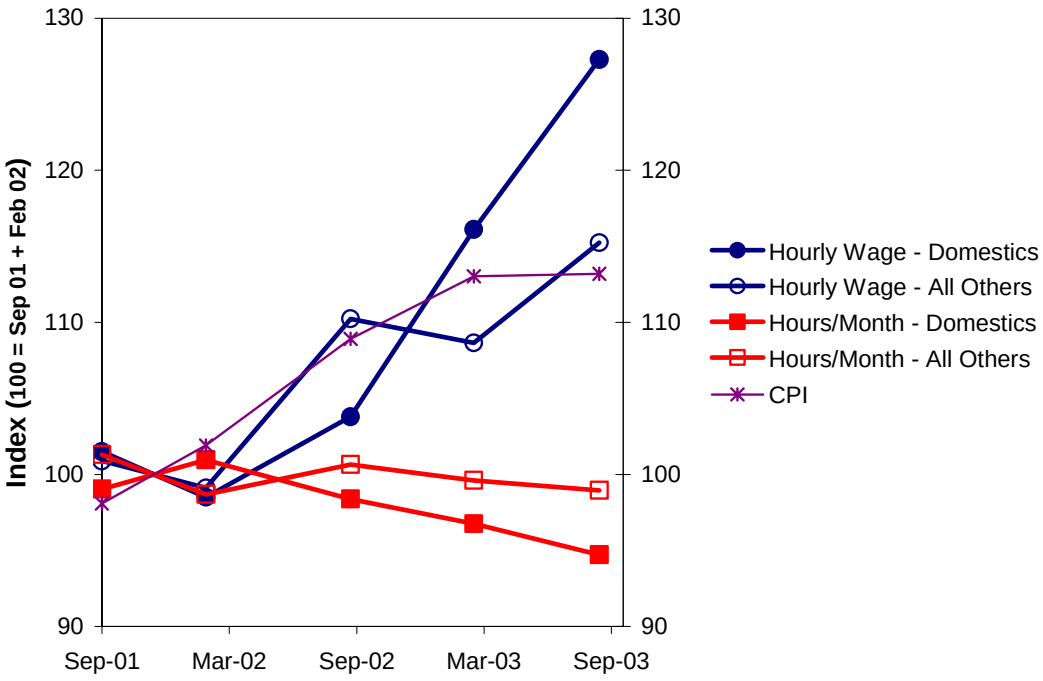


Figure 5

Mean Monthly Earnings

African and Coloured Domestic Workers, Ages 15-65, with Less than Matric

Versus Similar Workers in All Other Occupations

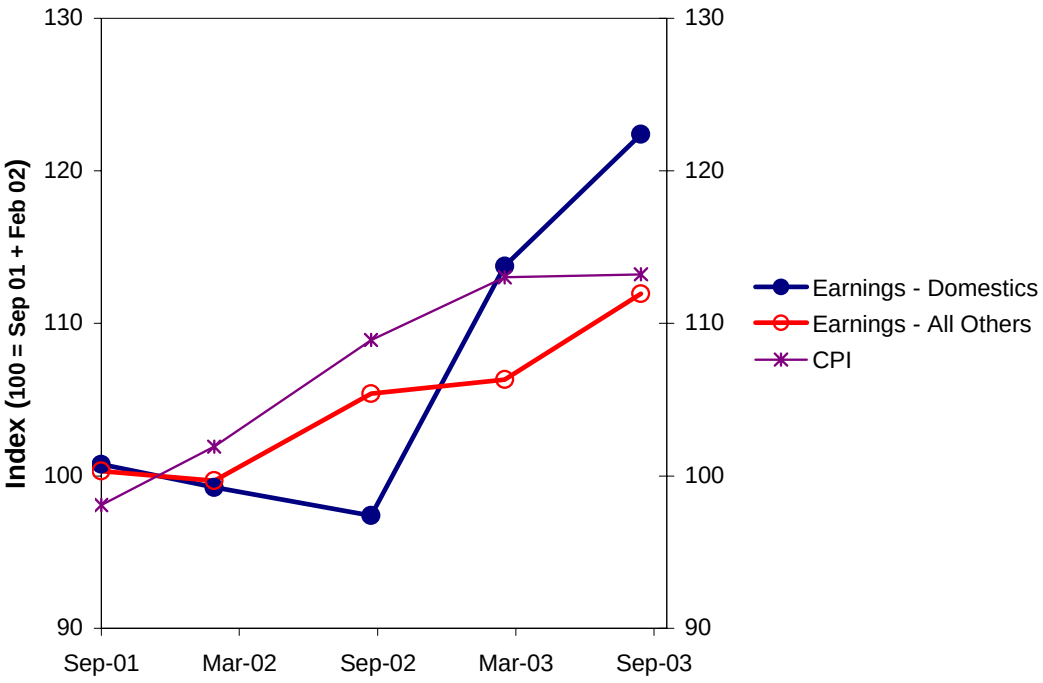


Figure 6

Published Employment Estimates

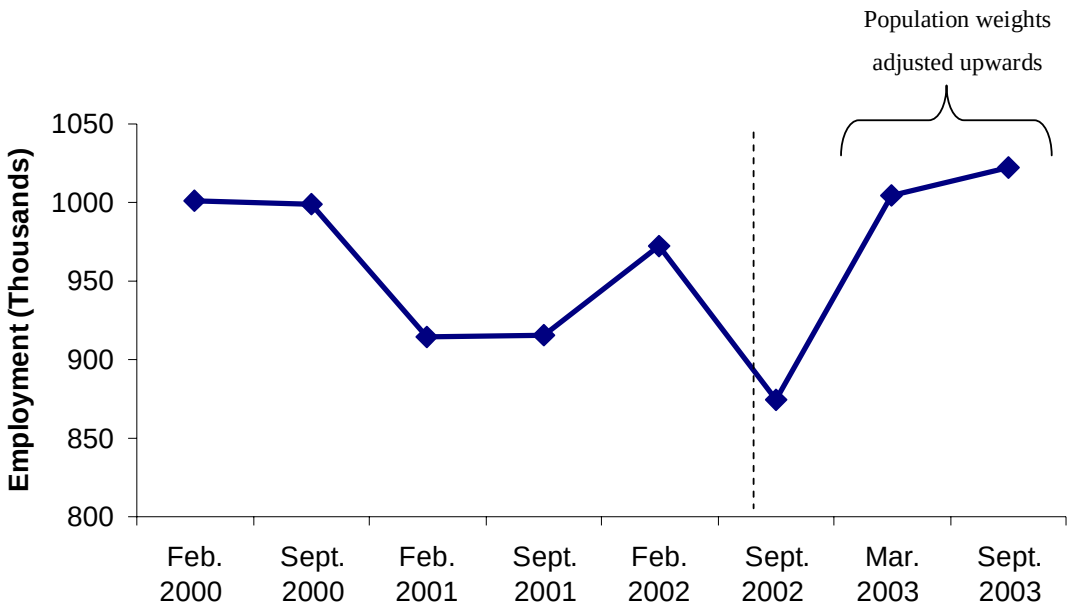
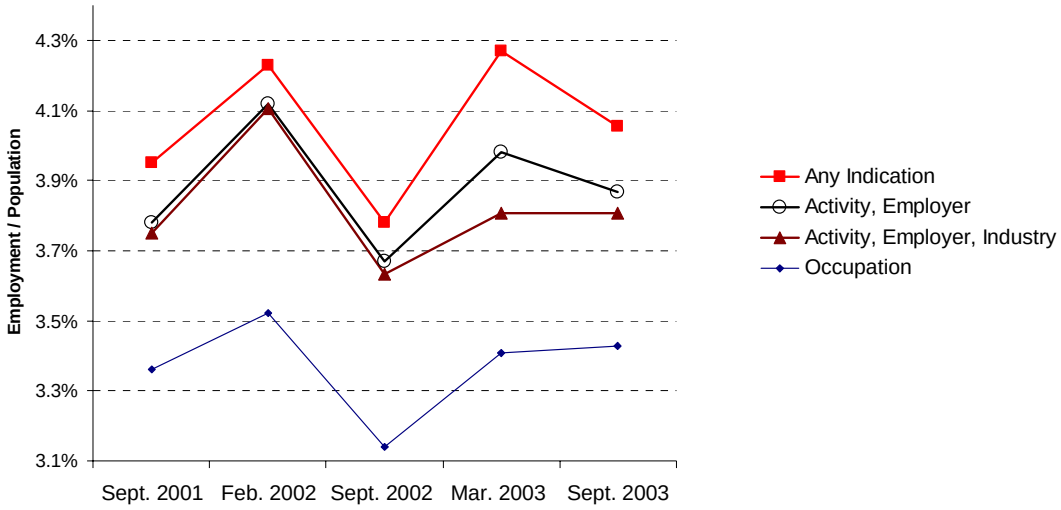


Figure 7

Employment of Domestic Workers as Share of Population of Working Age

Comparing alternate sample definitions



Notes: "Activity" refers to the question "In the last seven days, did …do any work as a domestic worker for a wage, salary, or any payment in kind?" "Employer" is based on those who report "Working for one or more private households as a domestic employee, gardener or security guard." The group "Activity, Employer" requires positive responses to both questions. "Industry" is based on Stats SA industry code for domestic workers (a separate pair of questions about employers). "Occupation" is based on Stats SA's coding of open-ended occupation questions (and excludes gardeners). "Any indication" is the union of all of the above definitions. The category "Activity, Employer, Industry" excludes security guards, and is the sample used in the analyses of this paper.

Percentage change in employment to population ratios under different definitions

	3/2	2/2
Any Indication	**4.4%**	**1.8%**
Activity, Employer	**1.8%**	**-0.6%**
Activity, Employer, Industry	**-0.6%**	**-3.1%**
Occupation	**2.3%**	**-0.7%**

Notes: "3/2" treats the first three waves as "before" and the last two as "after." "2/2" drops the middle wave.

Figure 8

Employment to Population Rates of African and Coloured Domestic Workers, Ages 15-65, with Less than Matric Degree Compared to Other Similar Employees

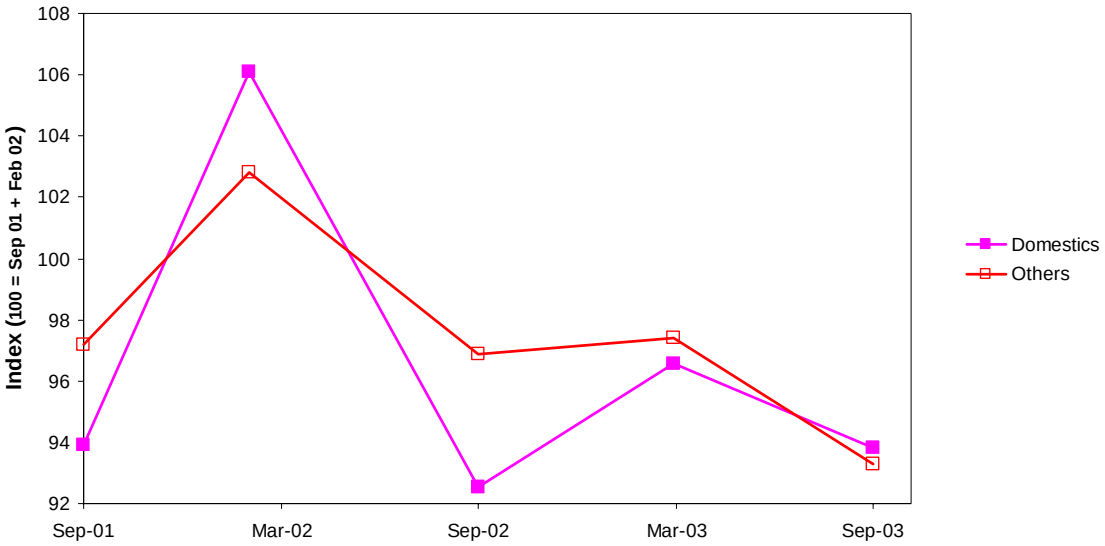


Figure 9

Earnings per Person of Working Age

African and Coloured Domestic Workers, Ages 15-65, with Less than Matric Degree

Compared to Other Similar Employees

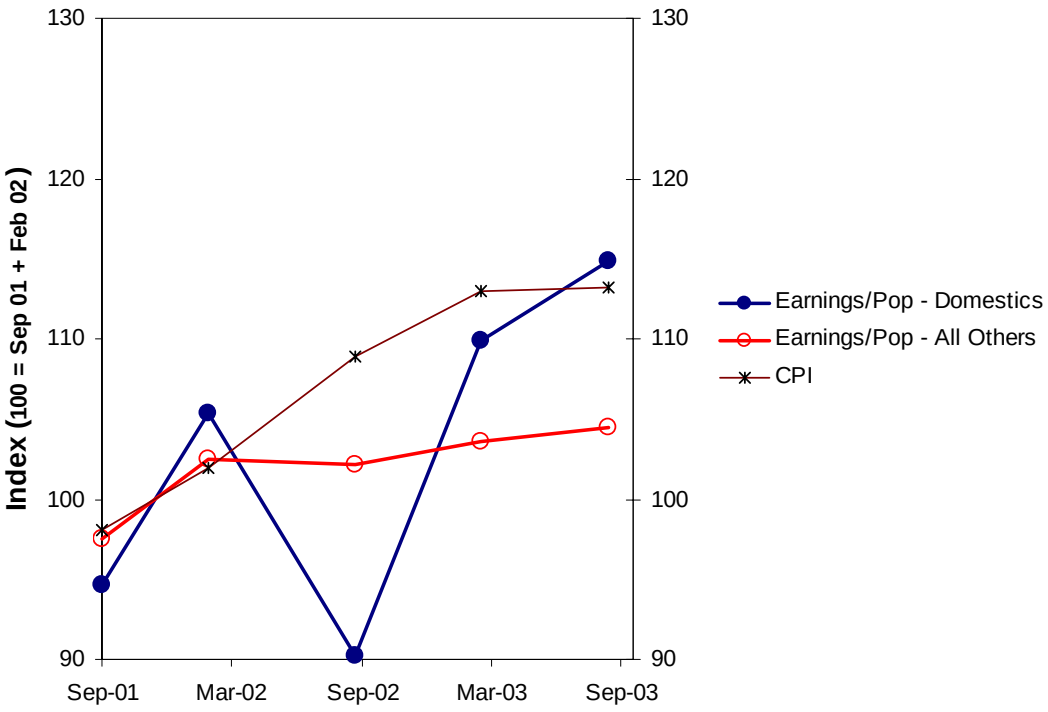


Table 2

Cross-Sectional Regression Results:

Exploiting Regional Variation in the Share Below the Minimum

	Change in mean log wage		Change in hours per month		Change in domestic emp./pop.	
Initial share below minimum	0.471 (0.066)**	0.474 (0.065)**	-41.6 (7.71)**	-42.2 (7.62)**	-0.003 (0.006)	-0.005 (0.006)
Change in total emp/pop ratio		-0.349 (0.308)		67.0 (35.5)+		0.174 (0.031)**
Constant	-0.167 (0.053)**	-0.175 (0.052)**	24.4 (6.03)**	25.8 (5.94)**	0.001 (0.005)	0.004 (0.004)
Observations (Districts)	307	307	308	308	320	320
R-squared	0.16	0.16	0.08	0.09	0.001	0.13

Note: Robust standard errors in parentheses.
+ significant at 10%; * significant at 5%; ** significant at 1%

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