The Impact of Privatisation and Regulatory Reform on Wage Premia in State-Owned Enterprises in South Africa

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Abstract

Whilst much has been said about the employment effects of the privatisation of state-owned enterprises in South Africa, the debate has largely overlooked the impact of these events on the wage levels of those workers that retain their jobs in the restructuring process. This paper estimates earnings functions for workers in the South African economy to determine the impact of these changes. The results suggest that those workers that do retain their jobs in the restructuring process will be better off initially. This is because the state-owned firm will shift to become a partially private firm that operates in a highly regulated industry structure with limited competition. This enables the firm to earn abnormal profits and unionised labour is able to share in some of these profits. However, uncertainty at the individual level over whether they will be one of the lucky workers to retain their post will ensure that most workers will oppose any restructuring. The paper also demonstrates that any further liberalisation of the previously state-owned sector to introduce greater competition will make those workers worse off as their premium is eroded along with the abnormal profits. This applies as much to union members and non-union members. The result is that workers can be expected to oppose any further restructuring of these former state-owned firms after they have been initially reformed.

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Introduction

One of the strong thrusts of economic policy in South Africa currently is the restructuring of public enterprises and the liberalisation of the sectors in which they operate to allow greater competition (Republic of South Africa, 2000). There has been considerable opposition to such a policy on the basis that it may have a negative distributional impact. One of the primary concerns of the labour movement is the potential loss of employment from any restructuring exercise.[2] This has led to a framework agreement with the government that aims to limit the extent of employment loss and create alternative opportunities for workers that do get retrenched. However, an aspect that has received scant attention is the impact of this restructuring and liberalisation process on the wage levels of those that remain in employment. While wages for any particular occupation or skill are responsive to general supply and demand conditions in the country, some sectors of the economy may pay relatively higher or lower wages for the same occupation or skill for various reasons. Two important factors are ownership and the degree of competition.

It is expected that the process of wage determination within the firm will change as the government's control over these firms weakens. Managers will become increasingly responsive to profit demands and less to social demands. However, not only does ownership matter for wage determination, but also the degree of competition that the firm faces once it is restructured. Greater levels of competition would put greater cost-reducing pressure on the firm, giving it more incentive to resist large wage increases, while an industry structure with highly regulated entry may provide greater scope for profits and therefore a more generous wage settlement each year.

The aim of this paper is to shed some light on how wages in these state-owned enterprises are likely to change *relative to other sectors of the economy* in South Africa during this process. The paper firstly outlines the reason why we expect to see wage levels for the same occupation/skill differing between public and private sectors of the economy and between industries with high levels of entry regulation and those without. This includes a brief review of how the particular wage bargaining process in South Africa will also affect wage premia, especially the union premium. We then examine the empirical evidence from other countries before embarking on an empirical analysis of South Africa. The empirical analysis for South Africa involves estimating earnings functions for three components of the economy the state-owned sector, the highly regulated private sector, and the lightly regulated (or strongly competitive) private sector. The lightly regulated private sector with no entry restrictions provides the benchmark for wage comparisons. This enables an indication of how wages in the state-owned sector can be expected to evolve firstly as these firms are privatised into a market where they operate as a regulated monopoly or with only limited competition, and then as greater controls on entry are lifted and competition increases.

[2] The labour movement has also taken up more general social concerns such as pricing and access for the poor.

Impact of Ownership and Competition on Wage Levels

Public Ownership and Wage Levels

Wages in state owned enterprises (SOEs) are generally different to those in the private sector (see for example Gyourko and Tracy 1988). This is largely attributed to the fact that while the owners of private firms have as their overriding objective the maximisation of profit, the owners of SOEs have to respond to a wide array of different objectives, often assumed to be the maximisation of social welfare. This may entail, for example, paying higher wages in an attempt to raise living standards, paying lower wages in an attempt to dampen inflationary pressure and exercise fiscal restraint, or over-employing in an attempt to reduce unemployment (Viscusi et al. 1995). The point is that, as agents of the government, SOEs have to respond to the priorities and objectives of the government rather than those of the marketplace. Since wage setting forms a powerful tool in exercising these priorities (as illustrated above), it is thus no surprise that wages in the private and public sectors differ.

However, in both cases the agent – the manager – rather than the owner implements the objectives and has scope to pursue their own objectives given asymmetric information and imperfect monitoring. It is also argued that the scope for discretionary behaviour by managers of state-owned enterprises is greater than that of private firms, which might also explain differences in wage levels for the same occupation/skill level. The source of this additional discretionary scope is usually assumed to come from either the inability to easily structure incentive packages around fuzzy social objectives, or the lack of disciplining from the capital markets. The additional discretion may result in wage level differences if the manager chooses to pay higher wages in order to minimise labour strife and make his work environment more pleasant (Viscusi et al., p. 461); alternatively he or she might pay lower wages in order to spend more on managerial perquisites.

A third reason why wages in the state-owned sector might differ from those in the private sector is due to differences in the marginal product of labour. Efficiency differences between the two will result in different wage levels if wages are related to the marginal product of labour. Popular opinion is that efficiency is lower in public enterprises which suggests that wages should then be lower on this basis.

The ambiguous theoretical results are supported by empirical evidence that shows public sector wages may be higher or lower than private sector wages. Gyourko and Tracy (1988) for example find wages in the USA to be higher in the public sector than in the private sector, while Bonjour (2000) finds that public sector workers in Switzerland earn more than their private sector counterparts at the low end of the pay scale, while at the top end they earn less. Even in the same country the relationship may change over time, with Poterba and Rueben (1998) finding that public sector wages in the USA have declined steadily over time when compared to private sector wages. Finally, in a study possibly more comparable to the third-world situation faced in South Africa, Klitgaard (1989) finds that in many poor countries public sector wages have fallen well below the market-determined levels required to attract and retain necessary talent. In most of the above cases, the difference between the two wage levels has ranged from 0 percent to 20 percent.

Competitive Intensity and Wage Levels

Hendriks (1975) argues that the presence of abnormal profits in a sector is likely to result in higher wage levels for labour in the sector. The reason for this is two-fold. First, the presence of abnormal profits gives labour more bargaining power than would otherwise be the case due to changes in the optimal wage bargaining strategies for both employees and employers. For employees, the extra profits provide a lever to be used in wage negotiations, while for employers, the presence of greater profits increases the opportunity cost of industrial action (since, for example, a strike would result in a loss of abnormal profits over and above normal profits). Secondly, abnormally profitable firms are likely to be more able and willing to pay efficiency wages than are firms in a zero economic profit environment (Ibid.). Again, this is due to an increased opportunity cost to the firm, since shirking on the part of workers would reduce not only normal profits but abnormal profits as well. It is thus in the firm's own interests to pay higher efficiency wages to reduce shirking and increase efficiency.

The empirical evidence tends to support this assertion. It has been shown in several American studies that when firms earn economic profits, the earnings of employees in those firms are likely to be higher than they are in firms earning only normal profits (Rose 1987). Unsurprisingly, labour rent sharing of this nature has been shown to be particularly evident when such labour is unionised (Salinger 1984). Teal (1994) shows that the same relation holds in a typical developing country labour market, where both the profitability of firms and the degree of unionisation are highly significant determinants of employee earnings.

We expect abnormal profits to exist in sectors where competition is limited. Limits on competition can arise from a number of reasons, including natural scale economy rationales (e.g. financial services, airlines) and deliberate public entry regulation in the sector (e.g. telecommunications). The abnormal profit from regulation is often referred to as regulatory rents, and is particularly relevant to the process of restructuring state-owned enterprises in South Africa. The focus of the restructuring process is on utilities where regulations and not tariff barriers impose the greatest limits on competition. In addition, the strategy being pursued is one of using entry regulation to deliberately limit competition initially while both firm and regulator adjust to the new circumstances. We therefore expect that after the initial phase of restructuring that the former state-owned firms will face a period of limited competition and regulatory rents. This should then result in a wage premium for the employees over that component of the private sector that faces greater levels of competition.

Research using time series data from the United Stated has confirmed this hypothesis for such industries as trucking and airlines. In her study of regulatory rents in America's motor carrier industry, Rose (1985) found that firms lost up to 19 percent of their market value – as a result of downward adjustments in profit forecasts – when the industry was partially deregulated. Rose (1987) shows that wages of unionised labour in the trucking industry were fourteen per cent lower after the partial deregulation of that industry than they would have been had the regulation been maintained.

The Impact of Trade Unions and Bargaining Councils

Rose (1987) found regulatory rent sharing to be confined to unionised labour, with little evidence of rent spillovers to non-union workers. This aspect of labour rent sharing whether it applies only to

unionised employees or more widely remains controversial, with some degree of speculation either way (see Dickens and Katz 1987a, 1987b). It is, however,agreed upon by most economists that organised labour is likely to be far more effective in extracting rents from employers than unorganised labour, and for this reason we expect the effects of rent-sharing in highly regulated industries to be far more pronounced among unionised workers than non-unionised workers. Thus, in the private sector, we expect the union wage premium (i.e. the gap between union and non-union wages) to be larger in highly regulated industries than in lightly regulated industries. In the public sector, however, it is a generally accepted economic fact that the union wage premium is usually lower than that in the private sector, even when public sector wage levels as a whole are higher than those in the private sector (Tracy 1988). This is usually a result of uniform pay scales in the public sector that apply regardless of union status.

In the South African context, the above discussion of the relationship between union and non-union wages is complicated by the fact that labour legislation (specifically the Labour Relations Act of 1995) makes provision for compulsory industry-specific centralised bargaining councils. The wage agreements that are determined by these councils (by a process of negotiation between employers and trade unions in the industry concerned) are, in theory, applicable to all workers within that industry, regardless of their union membership status. With such a system, one might expect to find little evidence for any union premium at all. However, empirical research on the South African labour market has shown that significant union premia do in fact exist, with estimates generally ranging from 10 percent to 60 percent (Moll 1993, Mwabu and Schultz 1998, Butcher and Rouse 2001), depending on the specification used.

Moll (1995) suggests three arguments that explain the presence of this apparent anomaly. Firstly, the enforcement of the bargaining council rulings especially in smaller firms is incomplete, with the result that the wage agreements are often flouted. Secondly, bargaining council rulings are applied in the formal sector only, with the result that there is often a wage differential between the formal and informal sectors. Thirdly, unions may negotiate wage levels over and above those stipulated by the bargaining council, with the result that unionised workers earn a wage premium over their non-unionised counterparts. Both the theory and empirical evidence support the existence of a union wage premium in South Africa despite the presence of industrial bargaining councils. However, it is difficult to assert whether the firms in highly regulated sectors will have higher union premiums than other sectors of the economy. This is because the existence of the union premium depends on other factors, such as the share of small firms and the degree of informal-sector involvement in the industry that may differ between sectors.

Methodology

International studies examining wage differentials between the public and private sectors or between highly regulated and lightly regulated sectors have estimated separate earnings functions for the two groups under study to determine if any wage premiums exist for one of the groups.[3] Earnings functions control for a host of demographic variables that influence earnings (from age, education, race, location, gender, etc) and then determine if the industry itself has an influence on the earnings levels. There are two standard methods for separating the two groups for comparison. The first is to make use of cross-sectional data and allocate different firms or sectors to different groups to estimate separate earnings functions. An alternative approach is to use time series data for one particular industry that can be used to compare wages before and after a privatisation or regulatory event in that industry. The cross-sectional approach presents problems in that it makes it difficult to control for extraneous industry- specific variables that could distort the results. For example, it may be the case that highly regulated industries also happen to be those in which there are skills shortages, in which case the wage premium due to regulation would be difficult to isolate from that, due to the skills shortage. However, in cases where limited privatisation and regulatory change has occurred, cross-sectional data may be the only approach possible given the scarcity of comparative time series data.

In the process of privatisation and liberalisation, firms go through three distinct phases – public ownership, highly regulated firm with a monopoly or limited competition, and finally a lightly regulated firm with greater levels of competition. To accommodate this, the paper divides the sample into these three groups to determine whether wage levels differ between them. It makes use of cross-sectional data due to limited time series data (suitable data from the OHS is only available from 1995 onwards).

It is also common to assume that only union members are beneficiaries of any labour rents as they are in a position to bargain for these rents. However, the existence of bargaining councils in South Africa make it likely that all labour in a specific industry, whether unionised or not, will gain from any agreement negotiated by the unions. For this reason, the approach in this paper is to estimate both total wage premia (i.e. the wage premium of all workers, regardless of unionisation, using the unregulated private sector as the benchmark) as well as union wage premia in each sector.

Earnings Function Specification

Rospabe (2001) analyses union wage premia for the South African labour market using cross-sectional OHS data to derive multivariate regression functions (in which log wages are expressed as a linear function of variables such as race, gender, location, unionisation, education, age etc.) This study will follow much the same approach, using dummy variables for regulation and public ownership as further determinants of wages. To measure the total wage premia across the three sectors of the economy, a standard earnings function is used, with log earnings expressed as a function of exogenous worker and industry characteristics, as follows:

$$\ln w_{i=} \quad X_i + \quad R_i + \quad _I \qquad (1)$$

where R is a set of dummies indicating the regulatory and public ownership status of the industry and X is a vector of exogenous worker characteristics such as race, industry, province, education

[3] In the case of regulated versus unregulated firms, any premium is assumed to measure the degree of labour rent sharing.

etc. (See Appendix 1 for the full list of worker characteristics included in the specification).

When measuring the union wage premium across the three sectors, there is a choice of econometric specifications of varying degrees of sophistication. Four of the most common specifications of the premium (Rospabe 2001, p.5) are considered below. These specifications differ on three counts: firstly, on whether union status is considered as endogenous or exogenous; secondly, on whether union and non- union members share the same earnings regime or not (i.e. whether the earnings function is the same for both); and thirdly, on whether sample selection bias is taken into account. The specifications are as follows:

- A single earnings function, with union membership treated as exogenous:

$$\ln w_i = X_i + U_i + \quad (2)$$

where U is a dummy indicating the union status of the worker and X is a vector of exogenous worker characteristics such as race, industry, province, education etc. (See Appendix 1). This specification, which does not take the problem of self-selection into account, can be shown to lead to an overestimation of the effect of the union dummy (Ibid.)

- A single earnings function as above, but with adjustment for sample selection:

$$\ln w_i = X_i + U_i + \quad (3)$$

where is the inverse Mills ratio computed from the estimate of a probit model of union membership (Ibid.)

- A separate earnings regime among union and non-union members, with no endogenous switching between the two (OLS):

$$\ln w_i^u = X_i^u + \quad (4)$$

$$\ln w_i^n = X_i^n + \quad (5)$$

where u indicates the union sector and n the non-union sector.

- A separate earnings regime among union and non-union members, allowing for endogenous switching between the two regimes (ES):

$$\ln w_i^u = \beta_1^v X_i^u + \beta_2^v \lambda_1^v + \eta_i^v \quad (6)$$

$$\ln w_i^n = \beta_1^n X_i^n + \beta_2^n \lambda_1^n + \eta_i^n \quad (7)$$

where is computed using the estimate of a probit model of union membership.

None of the above specfications has been proved superior to the others (Ibid. p.6), and for this reason results are usually tested for sensitivity to each of the different specifications. For the purpose of this paper however, and in the interest of simplicity, we use only the first specification to measure the union premium (i.e. equation 2). While we have seen that this will possibly lead to an overestimation of the effect on earnings of unionisation, we feel justified in taking this approach, at least as a first step, since for the purpose of this study we are primarily interested in the relative (rather than absolute) sizes of the union premia across the three sectors. Put differently, this specification may not allow us to determine the exact size of the union premium, but it will enable us to tell whether there is indeed a larger union premium in some sectors than in others. As a point of departure, this is sufficient.

The specification of the determinants of earnings used in this analysis draws on that developed by Rospabe (2001). The determinants are taken to include standard human capital measures (such as education, experience and seniority), race, gender, province, industrial sector, marital status and occupation. Furthermore, it was noted in the discussion of trade unions and bargaining councils above that the union wage premium in an industry may be affected by the proportion of small firms and the degree of informal sector involvement in the industry. In an attempt to control for at least one of these effects, a variable for the proportion of informal sector involvement in the industry is also introduced using data from Hodge (1998). Appendix 1 discusses the above variables, and how they are derived, in more detail. The dependent variable of the regressions is the natural log of monthly earnings, where earnings are defined as the total salary, including bonus and overtime, before any deductions such as taxes, insurance payments, pension contributions etc. are made. Differences in the amount of hours worked per month are controlled for by introducing this variable as one of the determinants.

Group Classification

Given the nature of the restructuring process where firms gradually move from one phase to another often through partial privatisation and the gradual introduction of competition, it is often difficult to allocate firms cleanly to one group or another. Making use of OHS data, it is also necessary to classify entire industries, which again can be problematic if there is a mix of public and private ownership, or if the broad sectoral classification includes both heavily regulated and lightly regulated sub-sectors. As the focus of the study is on utilities that go through a phase of regulated monopoly or limited competition after privatisation before more competition is introduced, the sample of public and restructured companies is mainly utilities. However, for regulated industries, not only previously restructured companies are included in order to broaden the statistical base. The eventual choice of industry classification for this paper is as follows:

- State-owned sectors – Energy (Eskom) and transport (Transnet) excluding air and road transport. These sectors are dominated by state-owned companies that do not have any private share ownership even though they have been corporatised and subject to internal restructuring.
- Highly regulated sectors – fixed line and mobile telecoms (Telkom), financial services and air transport (SAA). All these sectors have regulated entry and limited competition making the existence of regulatory rents probable while two include dominant ex state-owned enterprises for comparative purposes. Although neither Telkom nor SAA are fully privatised, management control does now reside with private investors and so their behaviour should reflect that of a regulated private firm.

- Lightly regulated sectors taken to include the rest of the economy including the rest of the service sector (e.g. retail and tourism-related services), agriculture, and manufacturing. It could be argued that some manufacturing sectors could be excluded from this group if they face high tariff barriers
  and have a concentrated industry structure making potential competition limited.

Data

The data used for this research have been obtained from the 1999 and 1995 October Household Surveys conducted by Statistics South Africa, covering 30 000 households representing the full spectrum of the South African population. The OHS data are collected on a stratified cluster-sampling basis; this sampling method is taken into account when performing the regressions below. The dataset has been modified so that self-employed workers as well as those with non-positive or unspecified wages are omitted. Observations with missing data on any of the variables included in the model specification are also omitted, leaving a sample set of 17 780 wage-earning employees in 1999 and 11 825 in 1995.

Wage Premiums in State-Owned and Highly Regulated Sectors

Total Wage Premium

The results of the estimation of the earnings functions indicate that both the state-owned sector and the highly regulated sector have a wage premium over the lightly regulated private sector. The results displayed in table 1 show that that premium (expressed as the amount that workers in these sectors earn over and above their counterparts in the lightly regulated private sector) is higher for the highly regulated sector (11 percent in 1995 and 12 percent in 1999) than for the state-owned sector (8 percent in 1995). The insignificant result for the state-owned sector in 1999 indicates that the premium cannot be assumed to be different from zero and has therefore disappeared. All other results are highly significant.

Table 1: Total Wage Premia in the Highly Regulated and State-Owned Sectors

	1995 %	1999 %
State-owned Sector	8.0 ** (1.97)	4.1 (0.60)
Regulated Private Sector	11.1 *** (3.92)	12.3 *** (3.24)

**statistically significant at the 5percent level; ***statistically significant at the 1 percent level

The initial premium in the state-owned sector differs to numerous countries where public sector wages are lower than private sector wage (see for example Klitgaard, 1989). This may be partly explained by the fact that the Apartheid-era government paid public sector workers a premium in order to garner political support during the growing internal conflict in the 1980s. The change in economic policy post 1994 towards fiscal restraint and reduction in inflation (Abedian and Biggs, 1998), would have impacted on wage agreements in the public sector because of the direct influence that the government would have on these agreements. In addition, pressure to improve

efficiency and raise productivity in the state-owned sector prior to the sale of these assets would also have added pressure to remove the wage premium that did exist. These factors would explain the elimination of the state-owned sector premium by 1999.

For the highly regulated sector the results are directly in line with expectations that regulatory rents exist and that labour has managed to capture some of the rents. The premium is not only higher than the state-owned sector, but also increases slightly from 1995 to 1999 in contrast to the elimination of the state-owned sector premium. The implication of this result for the wages of those employed in the state-owned sector is twofold. First, the wage premium they have enjoyed in the past is declining under the fiscal austerity and internal restructuring of these enterprises, making them worse off. However, in the event that the enterprise is restructured to a semi-privately owned and highly regulated firm, they can expect to see their wage premium increase to 12.3 percent, making them better off. So while some workers will lose their jobs in the restructuring process, those that remain can expect to be better off. This implies that those workers that expect not to lose their jobs in the restructuring process might actually support the restructuring process. However, as noted by Rodrik (1995) in the analysis of trade policy reform, the uncertainty faced by an individual over whether they expect to gain or lose from the process means that all workers will tend to oppose reform. It also suggests that once the initial restructuring has occurred, there is likely to be opposition from both labour and shareholders to further reform that reduces entry regulation and introduces greater competition. The reason is that this is likely to diminish the wage premium that labour enjoys. The wage premium may never be eliminated due to the limited scope for large-scale competition in these sectors that are characterised by significant economies of scale, but it should at least decline.

Union Wage Premium

The estimation of the union wage premium in each of the three groups of sectors provides slightly unusual results. Table 2 shows that not only has the union premium been increasing since 1995, but that this premium is unusually lower in highly regulated and state-owned sectors.

Table 2: Union Wage Premia among Workers in Regulated and Unregulated Industries, 1999

	1995 %	1999 %
State-owned Sector	9.0 *** (2.65)	20.0 * (1.69)
Regulated Private Sector	6.3 ** (2.16)	11.0 * (1.78)
Lightly Regulated Sector	16.1 *** (14.33)	21.7 *** (10.93)

*statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level

The increase in the union premium in all sectors is indicative of both that the trade unions have improved their bargaining power and the non-unionised workers have lost bargaining power. Trade unions would have improved their bargaining power through changes in the labour legislation (the Labour Relations Act of 1995 and the Basic Conditions of Employment Act), while the large-scale job losses in all sectors of the economy since 1995 would have weakened the bargaining power of non-unionised workers.

The relatively higher union premium in the lightly regulated sectors is expected in comparison to the state-owned sector (see Tracy, 1988). The rationale being that the public sector employs pay scales that do not take into account union membership. However, it is counter-intuitive why the union premium in the highly regulated sector of the economy is in fact lower than that in the lightly regulated sector, by approximately 10 percent. This finding contradicts our earlier hypothesis that labour rent sharing in the regulated sector would be more pronounced amongst unionised labour than amongst non-unionised labour. While the econometric specification used to obtain these results (i.e. equation 1) is fairly simplistic, the ordinal relationship of the two premia is unlikely to be sensitive to changes in this specification.

One of the possible reasons for this result lies in the use of bargaining councils in South Africa. It was noted earlier that the effect of bargaining councils should be to eliminate the union premium altogether as an agreement is extended to all workers. However, due to different levels of enforcement in different sectors, and the ability for unions to negotiate increases above those of the bargaining council, the union premium does emerge. The lower premium in the highly regulated sector may reflect that the bargaining council agreements are more strictly enforced and that the union bargaining power is weak. Enforcement may be higher, because the highly regulated sector is comprised of services that have a high concentration of large firms and limited informal sector activity. While an attempt was made to control for the degree of informal sector involvement in each industry, this still leaves the variable of firm size unaccounted for. It is also plausible to suggest that government regulated firms are less likely than their unregulated counterparts to flout the provisions of labour legislation, simply because they find themselves under closer scrutiny by the government. The unions may be weaker in these sectors, because they may be on the defensive from job-shedding at the former state-owned firms and their higher proportion of skilled workers in the sectors may limit the union support base.

The implication of this union wage premium analysis suggests that, as state-owned firms are restructured and enter a phase of initial regulation, the union premium declines quite considerably (approximately 9 percent in 1999). However, given that the total wage premium for labour in highly regulated firms over the state-owned sector is 12.3 percent in the same year, union members that retain their jobs during restructuring will continue to be better off after restructuring. Further, as entry regulation is relaxed and competition increases, the union members can expect to see their premium over other workers increase (from 11 percent to 21.7 percent) but their overall wage level premium decrease by 12.3 percent. This implies that they should be worse off and so, as noted above, are likely to join shareholders in opposing further deregulation of their industry.

The higher union premium in the lightly regulated, compared to the state-owned sector, suggests that restructuring is beneficial to union members in the end, even if they were better off under a highly regulated scenario.

Concluding Remarks

An important labour impact of privatisation and liberalisation that has been overlooked in the South African debate is the impact of these events on the wage levels of those workers that retain their jobs in the restructuring process. The results of this study suggest that any labour that does retain their jobs in the restructuring process will be better off initially. This is because the state-owned firm will shift to become a partially private firm that operates in a highly regulated industry with limited competition enabling it to earn abnormal profits and labour can share some of these profits. However, uncertainty at the individual level over whether they will be one of the lucky workers to retain their post will ensure that most workers will oppose any restructuring. The paper also demonstrates that any further liberalisation of the previously state-owned sector to introduce greater competition will make those workers worse off as their premium is eroded along with the abnormal profits. This applies as much to union members and non-union members. The result is that workers can be expected to oppose any further restructuring of these former state-owned firms after they have been initially reformed.

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Appendix 1: The Variables

Variable	Determination
Dependent:	
Earnings	Natural logarithm of Monthly earnings
Independent:	
Primary schooling	= 1 if holds any primary schooling
Secondary schooling	= 1 if holds any secondary schooling
Technical diploma	= 1 if holds a technical or professional diploma (artisan, teacher etc.)
University diploma	= 1 if holds a university diploma (degree, honours, master's, doctor's)
Experience	= age
Experience2	= age squared
Seniority	= years of tenure within the present firm
Seniority2	= seniority squared
Race	= dummy variables: white, coloured, indian, African
Gender	= 1 if male
Urban/rural	= 1 if works in an urban area
Marital Status	= 1 if married civilly or traditionally
Sector	= 1 if works in the formal sector (as indicated by the fiscal registration of the employer)
Hours/month	= average hours worked per month
Union status	= 1 if unionised
Occupation	= dummy variables: manager, professional, technical, artisan, clerical, sales, skilled agriculture, machine operator, elementary worker
Industry	= dummy variables: agriculture, mining, manufacturing, services, finance, utilties, public
Province	= dummy variables: Western Cape, Northern Cape, Eastern Cape, Free State, Kwazulu Natal, Gauteng, Mpumalanga, North West, Northern Province

The variables used in this model are based on those used by Rospabe (2001)

Appendix 2

Regression Results: Total Wage Premia for Private Regulated and State-owned Sectors, OHS 1995 and 1999.

	1995		1999	
Dependent Variable: ln (hourly earnings)	Coefficient	t-stat	Coefficient	t-stat
PRIMARY SCHOOLING	0.087 ***	5.40	0.101 ***	3.90
SECONDARY SCHOOLING	0.315 ***	18.26	0.350 ***	12.90
TECHNICAL DIPLOMA	0.478 ***	9.36	0.562 ***	8.02
UNIVERSITY DIPLOMA	0.624 ***	23.47	0.800 ***	18.20
EXPERIENCE	0.041 ***	14.14	0.044 ***	9.52
EXPERIENCE^2	-0.001 ***	-12.41	-0.004 ***	-8.18
SENIORITY	0.027 ***	18.05	0.021 ***	9.29
SENIORITY^2	-0.001 ***	-11.76	-0.001 ***	-4.97
AFRICAN	-0.774 ***	-51.78	-0.755 ***	-26.15
COLOURED	-0.562 ***	-32.941	-0.587 ***	-17.92
INDIAN	-0.357 ***	-16.26	-0.394 ***	-8.01
OTHER RACE	-	-	-0.130	-0.88
MALE	0.308 ***	27.55	0.241***	14.35
URBAN	0.121 ***	10.02	0.169 ***	8.00
MARRIED	0.010 ***	10.07	0.121 ***	7.05
FORMAL SECTOR	-	-	0.275 ***	11.27
HOURS/MONTH	0.001 ***	6.69	0.001 ***	3.94
UNIONISED	0.145 ***	14.36	0.208 ***	11.14
REGULATED SECTOR	0.111 ***	3.92	0.123 ***	3.24
STATE-OWNED SECTOR	0.080 **	1.97	0.041	0.60
AGRICULTURE	-0.426 ***	-22.88	-0.405 ***	-13.57
MINING	0.207 ***	10.81	0.300 ***	8.85
UTILITIES	0.218***	4.25	0.462 ***	4.94
CONSTRUCTION	0.013	0.61	0.115 ***	3.18
MANUFACTURING	0.133 ***	9.05	0.164 ***	6.62
TRANSPORT	0.079 **	2.12	0.198 ***	5.25
FINANCE	0.122 ***	5.33	0.192 ***	6.12
PROPORTION INFORMAL	-0.184 ***	-4.25	-0.154 ***	-3.52
MANAGER	0.550 ***	20.19	0.556 ***	12.18
PROFESSIONAL	0.617 ***	12.63	0.611 ***	10.99
TECHNICAL	0.411 ***	17.06	0.314 ***	7.23
CLERICAL	0.061 ***	3.31	0.116 ***	3.60
SALES	-0.083 ***	-4.20	-0.084 ***	-2.57
SKILLED AGRICULTURE	0.275 ***	4.68	-0.142 ***	-3.18
MACHINE OPERATOR	-0.110 ***	-6.80	-0.037	-1.42
ELEMENTARY WORKER	-0.269 ***	-16.07	-0.189 ***	-7.26
DOMESTIC WORKER	-0.280 ***	-10.10	-	-
EASTERN CAPE	-0.110 ***	-5.97	-0.482 ***	-14.46
NORTHERN CAPE	-0.187 ***	-8.66	-0.252 ***	-7.27
FREE STATE	-0.277 ***	-14.93	-0.543 ***	-16.27
KZN	0.092 ***	5.30	-0.168 ***	-5.57
NORTH-WEST	0.033 *	1.65	-0.222 ***	-6.64
GAUTENG	0.199 ***	12.16	-0.113 ***	-4.22
MPUMALANGA	0.033 *	1.70	-0.210 ** *	-6.61
NORTHERN PROVINCE	0.078 ***	3.19	-0.317 ***	-9.60
CONSTANT	5.924***	91.09	***	
OBSERVATIONS	17780		11824	
R-SQUARED	0.6907		0.5369	
F OBSERVED	972.65		342.11	

*significant at the 10% level; **significant at the 5% level; ***significant at the 1% level

Appendix 3

Regression Results: Union Wage Premia, OHS 1995

	STATE-OWNED SECTOR		REGULATED PRIVATE SECTOR		NON-REGULATED PRIVATE SECTOR	
Dependent Variable: Log (hourly earnings)	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
PRIMARY SCHOOLING	-0.223 ***	-3.08	-0.206	-1.26	0.099 ***	6.02
SECONDARY SCHOOLING	-0.038	-0.53	0.066	0.42	0.324 ***	18.23
TECHNICAL DIPLOMA	-0.406 **	-2.19	0.135	0.70	0.532 ***	9.55
UNIVERSITY DIPLOMA	0.188 *	1.89	0.279 *	1.77	0.648 ***	21.13
EXPERIENCE	0.038 ***	3.00	0.069 ***	6.06	0.040 ***	12.99
EXPERIENCE^2	0.000 ***	-2.80	-0.001 ***	-5.23	0.000 ***	-11.50
SENIORITY	0.031 ***	5.87	0.019 ***	3.03	0.027 ***	17.01
SENIORITY^2	-0.001 ***	-4.78	0.000	-1.43	-0.001 ***	-10.87
AFRICAN	-0.637 ***	-12.43	-0.453 ***	-10.02	-0.835 ***	-49.04
COLOURED	-0.599 ***	-8.64	-0.294 ***	-6.02	-0.614 ***	-31.65
INDIAN	-0.294 ***	-3.23	0.019	0.36	-0.421 ***	-17.25
MALE	0.348 ***	5.39	0.220 ***	5.81	0.311 ***	26.20
URBAN	0.145 ***	3.43	0.150 **	2.21	0.116 ***	9.02
MARRIED	0.164 ***	4.03	0.082 **	2.49	0.098 ***	9.17
HOURS/MONTH	0.000	1.49	0.002 ***	3.95	0.001 ***	5.84
UNIONISED	0.090 ***	2.65	0.063 **	2.16	0.161 ***	14.33
AGRICULTURE	-	-	-	-	-0.418 ***	-21.81
MINING	-	-	-	-	0.201 ***	10.36
UTILITIES	0.165 ***	4.20	-	-	-	-
CONSTRUCTION	-	-	-	-	0.022	1.03
MANUFACTURING	-	-	-	-	0.131 ***	8.73
TRANSPORT	-	-	-0.089 **	-2.55	0.353 ***	4.12
FINANCE	-	-	-	-	0.090 ***	3.83
PROPORTION INFORMAL	-	-	-	-	-0.145 ***	4.05
MANAGER	0.276 ***	3.19	0.661 ***	6.98	0.549 ***	18.11
PROFESSIONAL	0.432 ***	3.34	0.618 ***	4.62	0.648 ***	11.51
TECHNICAL	0.227 ***	3.29	0.439 ***	5.74	0.425 ***	14.41
CLERICAL	0.095	1.59	0.066	0.87	0.062 ***	3.00
SALES	-0.238 **	-2.52	-0.206	-1.46	-0.066 ***	-3.23
SKILLED AGRICULTURE	0.200 ***	2.77	-	-	0.263***	4.48
MACHINE OPERATOR	-0.217 ***	-4.41	-0.001	-0.01	-0.097 ***	-5.67
ELEMENTARY WORKER	-0.386 ***	-5.76	-0.264 **	-2.15	-0.255 ***	-14.53
DOMESTIC WORKER	-0.341 ***	-3.60	-0.290 **	-2.48	-0.285 ***	-9.53
EASTERN CAPE	-0.193 ***	-2.65	0.013	0.20	-0.114 ***	-5.77
NORTHERN CAPE	-0.245 ***	-2.83	-0.162 *	-1.84	-0.183 ***	-7.89
FREE STATE	-0.321 ***	-3.93	-0.167 **	-2.66	-0.280 ***	-14.06
KZN	0.068	1.02	0.016	0.28	0.095 ***	5.05
NORTH-WEST	0.008	0.10	0.024	0.33	0.031	1.42
GAUTENG	0.096	1.55	0.189 ***	4.22	0.208 ***	11.40
MPUMALANGA	-0.042	-0.59	-0.027	-0.36	0.039 *	1.83
NORTHERN PROVINCE	0.018	0.20	0.255 *	1.78	0.076 ***	2.91
CONSTANT	6.474 ***	24.60	5.575	19.84	5.979 ***	85.70
OBSERVATIONS	1043		1124		15613	
R-SQUARED	0.614		0.576		0.677	
F OBSERVED	40.23		45.54		842.36	

*significant at the 10% level; **significant at the 5% level; ***significant at the 1% level

Appendix 4

Regression Results: Union Wage Premia OHS 1999

	STATE-OWNED SECTOR		REGULATED PRIVATE SECTOR		NON-REGULATED PRIVATE SECTOR	
Dependent Variable: Log (hourly earnings)	Coefficient	t-student	Coefficient	t-student	Coefficient	t-student
Primary Schooling	0.116	0.56	-0.025	-0.09	0.104 ***	3.96
Secondary Schooling	0.344	1.53	0.266	1.03	0.352 ***	12.76
Technical Diploma	0.573 *	1.84	0.236	0.81	0.578 ***	7.17
University Diploma	1.115***	4.34	0.480 *	1.79	0.821 ***	16.65
Experience	0.022	0.54	0.073 ***	3.93	0.044 ***	9.05
Experience^2	0.000	-0.78	-0.001 ***	-3.48	0.000 ***	-7.70
Seniority	0.016	0.82	0.009	1.42	0.022 ***	8.39
Seniority^2	0.000	0.08	0.000	-1.27	0.000 ***	-4.27
African	-0.377 ***	-3.18	-0.567 ***	-7.39	-0.797 ***	-24.26
Coloured	0.030	0.21	-0.396 ***	-4.31	-0.639 ***	-17.51
Indian	0.087	0.29	-0.311 **	-2.22	-0.432 ***	-8.04
Other Race	-	-	0.041	0.21	-0.206	-1.02
Male	0.204	1.26	0.205 ***	3.38	0.243 ***	13.87
Urban	0.207	1.51	0.441 ***	3.30	0.161 ***	7.44
Married	0.255 **	2.08	0.039	0.58	0.120 ***	6.67
Formal Sector	0.035	0.15	0.546 ***	4.02	0.264 ***	10.51
Hours/Month	0.000	0.21	0.002 **	2.24	0.001 ***	3.79
Unionised	0.200 *	1.69	0.110 *	1.78	0.217 ***	10.93
Agriculture	-	-	-	-	-0.562 ***	-6.94
Mining	-	-	-	-	0.083	0.77
Utilities	0.222 **	2.16	-	-	-	-
Construction	-	-	-	-	0.086 **	2.21
Manufacturing	-	-	-	-	0.058	1.02
Transport	-	-	0.103	1.42	0.137 ***	3.04
Finance	-	-	-	-	0.199 ***	6.01
Proportion Informal	-	-	-	-	-0.365 **	-1.97
Manager	0.457 ***	2.58	0.750 ***	4.09	0.535 ***	10.88
Professional	0.625 ***	3.32	0.776 ***	4.25	0.603 ***	9.44
Technical	0.592 ***	3.10	0.520 ***	3.34	0.274 ***	5.53
Clerical	0.202	1.35	0.288 *	1.84	0.097 ***	2.78
Sales	-0.174	-0.71	0.119	0.58	-0.093 ***	-2.77
Skilled Agriculture	0.428	1.40	-1.293 ***	-6.41	-0. 142 ***	-3.15
Machine Operator	0.203	1.40	0.231	0.93	-0.039	-1.43
Elementary Worker	-0.149	-1.03	-0.360 **	-2.06	-0.187 ***	-6.98
Eastern Cape	0.028	0.13	-0.352 ***	-3.08	-0.509 ***	-14.51
Northern Cape	-0.306	-1.51	-0.211 **	-1.98	-0.256 ***	-6.99
Free State	-0.113	-0.71	-0.634 ***	-4.75	-0.551 ***	-15.74
KZN	0.083	0.43	0.028	0.22	-0. 187 ***	-5.93
North-West	-0.087	-0.40	-0.206	-1.30	-0.233 ***	-6.70
Gauteng	-0.166	-1.36	0.000	0.00	-0.124 ***	-4.31
Mpumalanga	-0.052	-0.34	-0.419 ***	-3.24	-0.215 ***	-6.46
Northern Province	-0.026	-0.17	-0.404 ***	-2.57	-0.334 ***	-9.68
Constant	6.383 ***	7.30	4.717 ***	9.04	6.082 ***	40.23
OBSERVATIONS	314		600		10910	
R-SQUARED	0.447		0,524		0.515	
F OBSERVED	40.23		45.54		290.85	

*significant at the 10% level; **significant at the 5% level; ***significant at the 1% level