David L. Lindauer and Richard H. Sabot

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THE PUBLIC/PRIVATE WAGE DIFFERENTIAL
IN A POOR URBAN ECONOMY

David L. LINDAUER*
Wellesley College, Wellesley, MA 02181, USA

Richard H. SABOT*
World Bank, Washington, DC 20433, USA

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This paper considers how wage differentials may be generated between the public and private sectors of a developing economy. Data from a 1971 household survey of the Tanzanian urban wage labor force are used to determine the pattern of wage differences across employer groups. After standardizing by worker characteristics, public sector employees are found to have earned a substantial wage premium over workers employed in the private sector. The non-market character of these differentials is examined in light of a number of hypotheses on public sector wage determination.

1. Introduction

The occupational structure of wages is generally more compressed in high than in low income countries. This may simply be due to the relative scarcity of educated workers, more generally of human capital, in poor nations. If so we can expect the wage structure to be compressed in poor countries, with obvious distributional consequences, as human capital accumulates in the course of economic development. Alternatively, the large wage premiums received, for example, by white collar workers may be due to non-market forces brought to bear on the wage structure by trade unions, multinational corporations, or the government. In this case the evolution of the wage structure in the course of development is less predictable.

The role of non-market forces in determining the structure of wages is of interest for reasons of allocative efficiency as well as for distributional concerns. There is a strong presumption that the greater the distortion of the wage structure by non-market forces the greater the inefficiencies in the
allocation of human resources, with consequent negative implications for the pace of economic growth.

Our focus in this paper is on wage differentials between the public and private sectors in urban Tanzania in 1971. The general issue of public versus private compensation has not received nearly as much attention in high income economies as, for example, wage differentials between unionized and non-unionized establishments. In the United States this is because the 'prevailing wage rate' model has been used both to determine and hence explain government pay scales. The government is viewed as just another price taker accepting a market-determined rate. In a perfectly competitive labor market group affiliation does not influence wages. Irrespective of differences among groups of workers in goods produced, in the technology or organization used to produce them, in the profitability of such production, or in the ownership of the establishments in which they work, competition in the labor market will ensure that all workers with the same personal economic characteristics and preferences for work activity receive the same rate of pay. If public/private wage differences occur, they are generally interpreted, within the competitive model, as due to short-run adjustment problems to lags in government wage movements.

Group affiliation matters only if non-market forces are sufficiently powerful to prevent competition in the market from eroding differentials among homogeneous workers. The public sector holds a commanding position in the labor markets of many developing countries. It is not uncommon to find 50% or more of all wage earners in the employ of the government or of parastatals. Moreover not all governments of developing countries either choose or are in a position to choose the 'prevailing wage' model in setting their pay scales. Government pay policies are often influenced by distributional, fiscal, employment or political goals. In sum, in many low income countries the public sector has neither the need nor the desire, nor even the ability, to act as if it is another wage taker.

In order to study the relationship of public to private wages, data for this analysis were obtained from the 1971 NUMEIST survey conducted by one of the authors. A random sample of households in Dar es Salaam and six other urban areas was surveyed. Over 5000 individuals including 1500 male

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1 The pay of government employees is generally governed by civil service pay codes. Parastatals are enterprises wholly or partly owned by the government but with some autonomy in factor and product pricing decisions. For a discussion of the relative size of government and parastatal employment in Africa see Lindauer (1981).
2 There is evidence, for example, that in Tanzania, colonial wage and salary structures, geared to the supply prices of Europeans, were not dismantled at Independence because to do away with what many regarded as the Fruits of Independence would have been politically untenable. See Sabot (1979, p. 210).
3 National Urban Mobility, Employment and Income Survey of Tanzania.
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African regular wage earners are included in the sample. Respondents provided information on their monthly earnings, non-wage benefits, education, employment history, and other personal characteristics, as well as the type of employer they worked for. Roughly one third of the sample fell into each employment category — private firms, government and parastatal enterprises. These proportions correspond to the distribution of employment by firm type reported in the 1971 Tanzania, *Survey of Employment and Earnings*.

In section 2 below, we present measures of differences in mean wages between government workers and workers in the employ of privately owned enterprises, between parastatal employees and workers in private enterprises and between parastatal and government employees. Both \( G \), the absolute differential and \( \alpha \), the relative differential, are presented where \( G=W_a-W_b \) and \( \alpha=(W_a-W_b/W_b) \) with \( W_a \) representing the mean wage of the higher paid group. Measures of \( G \) disaggregated by occupation level are also presented and hypotheses to explain the public/private differential that remain are suggested. We go on to contrast \( \alpha \) with the value of \( \beta \), where \( \beta \) represents the average percentage by which the pay of group a exceeds that of group b after standardizing for various personal characteristics of the wage labor force. Standardization is performed by estimating a simple wage function of the following general form: \( \ln W_L=f(X_L) \), where the log of monthly earnings of the urban wage earner is the dependent variable and \( X_L \) is a vector of his characteristics. In addition to those characteristics generally found in both low and high income countries to be good predictors of earnings, included among the independent variables are dummy variables for ownership category of the worker’s employer. The only other additional feature of the specification is a variable indicating whether the worker was employed in Dar es Salaam, the capital, or in one of the six smaller towns included in the sample. \( \beta \) is derived from the coefficient on the ownership dummy denoting group a (the high paid group, with group b as the base category) in the earnings function for the full sample.

In an aggregate earnings function such as this where the coefficients on the independent variables are constrained to be the same for all ownership groups, \( \beta \) can be a misleading indicator of the magnitude of standardized wage differences between ownership groups if there are marked differences in

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4Wage earners include employees of all firms, regardless of size. In this way this survey differs from most formal sector establishment surveys which usually select some arbitrary, usually 10 or 20, employment level as a cut-off point. Most African wage data are derived from such sources and thus exclude a sizeable proportion of private sector wage labor. Our sample does not exhibit this bias. Furthermore, since our sample is based on a household survey, it is not biased toward public employees as is often the case with establishment data which may suffer from underreporting of the private sector.

5Specifically, private firms accounted for 31.8%, government 29.7%, and parastatals 38.5% of all urban wage employment.

the 'wage structure' (coefficients in separate earnings functions) between parastatals, the government and private enterprises. Therefore, in section 3 we examine the nature and degree of differences between ownership categories in the structure of earnings. The following stratified regressions are estimated and subjected to a series of Chow tests: 

\[
\ln W_G = f(X_G), \\
\ln W_P = f(X_P), \\
\ln W_Pa = f(X_Pa),
\]

where Go = government, Pr = private, and Pa = parastatal and X is a vector of independent variables, in this case of course, excluding the ownership dummies. These tests do not, however, allow one to determine whether differences between the stratified regressions are due to differences in slopes or to differences in intercept terms. Therefore, we also estimate an interactive version of our aggregate earnings function. Specifically, we estimate the following equation:

\[
\ln W_L = a + bX + c(X \cdot Go) + d(X \cdot Pa) + e,
\]

where a is the constant, and b, c and d are coefficients measuring respectively the impact of the independent variables on earnings in the private sector, the incremental impact of those variables for government workers, and the incremental impact of those variables for workers in the parastatal sector.

Having specified and measured as best we can the differences between private, government and parastatal establishments in the level and slope of their earnings functions, in section 4 we illustrate the impact of these differences on the earnings of representative workers from each of the ownership categories. The representative workers are constructs; the characteristics of the government worker, for example, are given by the mean value for all government workers of each of the independent variables. For each of the three representative workers we use the stratified wage functions to predict, given their characteristics, what they would be paid in the other two ownership categories. The procedure we use, which is a simple form of simulation analysis, has been widely used in the analysis of labor market discrimination in high income countries and is beginning to be applied in low income countries. In effect we decompose the gross wage differences between ownership categories into the parts (E) 'explained' by various differences between categories in the characteristics of their labor force and the unexplained residual (R) reflecting differences between categories in wage functions. In explaining the method we focus on government and private sector employees. We assume that the mean wage of government workers is determined by the earnings function \( \bar{W}_g = f_g(X_g) \), where \( X_g \) are the mean values of a vector of characteristics. The mean wage that private sector employees would receive if they were paid according to the government wage

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7See Blinder (1973), and Malkiel and Malkiel (1973).
8See Knight and Sabot (1982), Birdsall (1981), and Behrman and Wolfe (1981).
structure is $f_a(X_b)$. The gross difference between sectors is then decomposed as follows:

$$G = W_a - W_b = (W_a - f_a(X_b)) + (f_a(X_b) - W_b)$$

$$= E + R.$$  

A similar decomposition is obtained by substituting $f_b(X_a)$ for $f_a(X_b)$, i.e., the wage received by government workers if they were paid according to the private sector wage structure. This procedure allows us to answer as best we can the fundamental question addressed by this paper: how much of the observed differences in mean earnings between ownership categories is due simply to differences in composition; how much is due to various non-market forces driving a wedge between employer categories in pay levels for workers with the same characteristics? This section also summarizes and concludes.

2. Gross and standardized wage differentials

Table 1 reveals that in 1971 government urban employees earned 133 sh. ($51\%$) more, and parastatal employees 146sh. ($56\%$) more than employees in privately-owned establishments.\(^9\) Table 2, however, indicates that, as is usual, labor demand in the government is much more skill-intensive than in the private sector. Because of these differences in composition the government–private differential for particular occupations is much less than the differential in mean earnings. Indeed, table 1 indicates that in six of eleven occupational categories the earnings advantage is to private firms. If the private sector had the occupational composition of the government the remaining differential in mean earnings between the two sectors would only be $16\%$ and would be almost entirely due to the higher salaries of managers in the government than in the private sector.

With respect to skill intensity the parastatal sector falls between the other two and, therefore, differences in occupational composition do not explain as much of the parastatal–private as of the government–private gross wage differential. Parastatal earnings are higher in ten of the eleven occupational categories. If the parastatal sector had the occupational composition of the government the differential in mean wages between the sectors would remain a substantial $23\%$.

The observed differentials may in part represent differences in the characteristics of specific jobs. No occupational standardization can ever account for all the variations in working conditions, security of job tenure

\(^9\)The available data are on earnings per month. Lacking wage rate information we cannot reject the hypothesis that observed earnings differentials can be explained by differences in number of hours worked. Since we have no \textit{a priori} reason to expect hours worked to be related to employer groups, we proceed assuming earnings to be a suitable proxy for wage rates.
Table 1
Occupational earnings in Tanzania for male African employees by type of employer (1971).\(^a\)

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private firm</td>
</tr>
<tr>
<td>(I) White collar</td>
<td>416(^d)</td>
</tr>
<tr>
<td>Managerial(^e)</td>
<td>1098</td>
</tr>
<tr>
<td>Semi-technical</td>
<td>603</td>
</tr>
<tr>
<td>Clerks, typists</td>
<td>409</td>
</tr>
<tr>
<td>(II) Production related</td>
<td>277</td>
</tr>
<tr>
<td>Craftsmen</td>
<td>264</td>
</tr>
<tr>
<td>Drivers</td>
<td>327</td>
</tr>
<tr>
<td>Machine operators</td>
<td>232</td>
</tr>
<tr>
<td>Skilled</td>
<td>315</td>
</tr>
<tr>
<td>(III) Unskilled</td>
<td>214</td>
</tr>
<tr>
<td>Messengers</td>
<td>216</td>
</tr>
<tr>
<td>Porters</td>
<td>293</td>
</tr>
<tr>
<td>Watchmen</td>
<td>200</td>
</tr>
<tr>
<td>Other unskilled</td>
<td>220</td>
</tr>
<tr>
<td>(IV) All occupations</td>
<td>263</td>
</tr>
</tbody>
</table>

\(^a\)Earnings are expressed in Shillings month and are net of fringe benefits. In 1971 there were approximately 7 shillings to the U.S. Dollar.

\(^b\)Source: Sabot, NUMEIST (1972).

\(^c\)All earnings represent the mean value of a given occupation employer cell. The reported occupations had a minimum of 8 employees per occupation employer cell.

\(^d\)The disaggregated occupation categories are representative samples of the given occupation category and, therefore, their weighted average will not precisely equal the aggregated categories mean value.

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Table 2
The distribution of formal sector employment by occupation and employer.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private firms</td>
</tr>
<tr>
<td>(I) White collar</td>
<td>9.6</td>
</tr>
<tr>
<td>(II) Production related</td>
<td>46.9</td>
</tr>
<tr>
<td>(III) Unskilled</td>
<td>43.5</td>
</tr>
<tr>
<td></td>
<td>100.0(^a)</td>
</tr>
</tbody>
</table>
Table 3
Fringe benefits by type of employer.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Private firm</th>
<th>Government</th>
<th>Parastatal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>4.6</td>
<td>0.5</td>
<td>4.0</td>
<td>3.1</td>
</tr>
<tr>
<td>Housing</td>
<td>4.8</td>
<td>6.4</td>
<td>23.2</td>
<td>12.4</td>
</tr>
<tr>
<td>Medical</td>
<td>49.9</td>
<td>73.3</td>
<td>76.8</td>
<td>67.4</td>
</tr>
<tr>
<td>Transportation</td>
<td>34.0</td>
<td>57.2</td>
<td>52.0</td>
<td>48.0</td>
</tr>
</tbody>
</table>

and risks involved in different work activities. Even within a competitive environment such differences will generate equilibrium wage differentials. However, in a labor market such as Tanzania's, where wage paying jobs are relatively scarce, it is unlikely that job attributes alone can account for all of the observed wage differences.

Another explanation for these differentials can be rejected immediately. Higher public sector earnings do not compensate for lower levels of non-wage benefits. Our survey includes information on whether non-wage benefits of food, housing, medical treatment and transportation were received. Table 3 presents results on the distribution of these benefits which suggest that fringe benefits are generally more prevalent in the public sectors.

Alternative hypotheses abound. The premium paid to public sector employees at the top of the occupational hierarchy could be a residual of the colonial wage structure. The relatively inferior wage position of the least skilled government workers may reflect the resolution of a conflict between the government's employment goals and fiscal constraints. The premia paid by parastatals could reflect the sharing of rents accrued as a consequence of monopoly power in product markets. Or, given that in Tanzania in 1971 many of the parastatals were recently nationalized multi-nationals, they could be the residuals of premia once paid by foreign firms as a way of securing the loyalty of employees or of avoiding charges of 'exploitation'. Of course, simply disaggregating mean wages by occupation is not sufficient to reject the hypothesis that wage differentials between ownership categories are due to differences in labor force composition, e.g., with regard to levels of education or employment experience. To examine this last hypothesis further we consider the results of our multivariate analysis.

Table 4 presents the mean values for workers in private, government and parastatal establishments of the independent variables included in the earnings functions. Public sector employees have more education than employees in the private sector; within the public sector the proportion of post-primary leavers is higher in government. Similarly public sector employees are somewhat older and have 50\% more experience in their
current job than workers in the private sector. Moreover, parastatal enterprises have a higher proportion of workers in the capital city. Standardizing for each of these differences in characteristics is likely to reduce the magnitude of differences in earnings between ownership categories.

Estimation of our aggregate wage function, $\ln W_L = f(X_L)$ yields the following results (note, standard errors appear in parentheses):

$$\ln W = 4.758 + 0.219E_1 + 0.914E_2 + 0.018L - 0.00016L^2 + 0.012A + 0.138D + 0.068Go + 0.194Pa,$$

$$n = 1291, \quad R^2 = 0.365. \quad (2)$$

For most employees their current job is their first job so the experience variable captures their total employment experience. The age variable is included to capture the effects on earnings of prior employment experience of workers who have had more than one job and of 'pure age' effects. The square of the experience variable ($L^2$) is included to capture non-linearities in returns to experience.
Ali but one of the coefficients, that on the squared experience variable, are significant. As expected, the coefficients on education, experience, and location in Dar es Salaam are positive and substantial and, as between the education variables, are in the usual size order. Nevertheless, the coefficients on the government and parastatal variables are significant and positive. The government coefficient is small; the parastatal coefficient is nearly three times its size. What this implies is that even after standardizing for differences in their education, employment experience (and age) and the location of their work, wage earners employed by the government earn a premium with a point estimate of 7.0 relative to private sector employees; parastatal workers earn a premium of 21.11.

These estimates of public–private differentials may be biased, however. The employer shift parameters only permit differences in the intercept terms of employer specific earnings functions. Because it constrains all three functions to have identical slopes, the aggregate equation may be misspecified. In the section that follows we consider whether there are observable differences between ownership categories in the structure of earnings. Our exercises provide the basis for a refined measure of public–private differentials. Equally important the comparison of wage structures provides insights into what explains these differentials and, in particular, into what explains workers in parastatals earning so much more than similarly qualified workers in private and government establishments.

3. Differences in wage structures

Stratifying by ownership categories entirely relieves the slope constraint imposed by the aggregate wage equation. Table 5 presents the results. The first question is whether there are statistically significant differences between employer categories in the level and/or structure of wages. The lower panel of Table 5 presents the results of a series of Chow tests which enable us to answer that question affirmatively. None of the possible pairwise combinations produces an $F$ statistic below the critical value at the 95th confidence level. Therefore we can reject the hypothesis that observed differences between employer categories in observed wage levels and structures are simply the product of chance.12 These $F$ tests do not tell us, however, whether the observed differences in equations between employer categories are due to differences in intercept

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11It is important to note that consistent and unbiased coefficients on the ownership category variables require that mobility between sectors is not a function of individual earnings, ceteris paribus. If inter-employer mobility is a function of earnings than a simultaneous model of both earnings and sector of employment would be required to test for the independent effect of employer type on wages.

12This approach was employed by Smith (1977) in her extensive empirical treatment of public–private wage differentials in the U.S.
terms (levels) or to differences in coefficients (structures). The stratified regressions suggest that most of the difference is due to differences in constants rather than differences in coefficients. The coefficients on all but one independent variable are very similar across the three ownership categories. For example, controlling for differences in other characteristics the estimated premium earned by secondary leavers relative to the uneducated is 140% in private establishments and 149% and 158% in government and parastatal establishments. The exception pertains to the location variable. While private firms pay a premium of 28% to workers employed in Dar es Salaam and parastatals pay a premium of 16%, the government pays a premium of only 1.5%.

In contrast to the similarity across ownership categories in coefficients there are large differences in constant terms. The difference between the private and parastatal constants represents an across the board wage premium for parastatal employees of 35 shillings or 32% above base
Table 6
Aggregate earnings function with interactions between employer categories and other independent variables.*

<table>
<thead>
<tr>
<th></th>
<th>Coefficients on independent variables</th>
<th>Coefficients on interactive variables with:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Government</td>
<td>Parastatals</td>
</tr>
<tr>
<td>$E_1$</td>
<td>0.196*</td>
<td>0.025</td>
</tr>
<tr>
<td></td>
<td>(0.061)</td>
<td>(0.098)</td>
</tr>
<tr>
<td>$E_2$</td>
<td>0.874*</td>
<td>0.040</td>
</tr>
<tr>
<td></td>
<td>(0.107)</td>
<td>(0.137)</td>
</tr>
<tr>
<td>$L$</td>
<td>0.013*</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>(0.005)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>$L^2$</td>
<td>0.0001</td>
<td>-0.0004</td>
</tr>
<tr>
<td></td>
<td>(0.0003)</td>
<td>(0.0003)</td>
</tr>
<tr>
<td>$A$</td>
<td>0.012*</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>$D$</td>
<td>0.250*</td>
<td>-0.236*</td>
</tr>
<tr>
<td></td>
<td>(0.048)</td>
<td>(0.068)</td>
</tr>
<tr>
<td>Constant</td>
<td>4.717</td>
<td>0.104</td>
</tr>
<tr>
<td></td>
<td>(0.173)</td>
<td>(0.153)</td>
</tr>
</tbody>
</table>

$R^2 = 0.369$
No. of observations = 1291

*See section 1 for a discussion of this specification. (Standard errors appear in parentheses.)

Significant at the 95% level.

earnings. The constant in the government equation represents a smaller premium of 11% relative to the private sector.

The results of the stratified equations are only suggestive, because the comparisons of coefficients across equations have not been subjected to rigorous tests for statistical significance. The fully interactive equation estimated next does permit such tests. The addition of the interaction terms to our aggregate equation allows us to measure whether any observed differences between ownership categories in the magnitude of the constant and of the coefficients on each of the independent variables is statistically significant. The estimated interactive equation is presented in table 6.

The results confirm the impression conveyed by the stratified equations. The premium in government establishments, for example to primary education, is given by $bE_1 + b(G_0 \cdot E_1)$. Similarly the premium to primary education in parastatals is given by $bE_1 + b(Pa \cdot E_1)$. It is notable that not a

\[13\] Adjusted, of course, according to the proper interpretation of dummy variables in semi-logarithmic equations.
single one of the interaction terms on primary education, secondary education, employment experience (and experience squared), and on age is statistically significant. The conclusion drawn is that in these respects the wage structure in government and parastatal establishments is very similar to the wage structure in private establishments.

The two significant interactive terms are also notable. The results confirm that the premium a government worker earns for being located in Dar es Salaam is significantly below the premium earned by private sector workers in Dar. The location premium in parastatals is lower than in private establishments, but not significantly so. The results also confirm that irrespective of personal characteristics workers in parastatals receive a premium, relative to workers in private and government establishments. The parastatal–constant interaction term is positive and statistically significant. The government–constant interaction term is positive but insignificant.\(^4\)

In section 2, we ventured several alternative hypotheses for the large premium earned by workers in parastatals. On reflection, the results of the interactive equation favor one explanation in particular. The large premium earned by parastatal employees survived our best attempts to standardize for differences between ownership categories in labor force composition. This does not necessarily imply that such differences play no role in explaining the remaining parastatal–private differential. Our measures of human capital, though comparable with those employed in other earnings functions, are still crude. Parastatals may be paying a premium to attract the very best candidates from among those of given levels of education and employment experience, a practice referred to as ‘creaming’. In unskilled occupations, however, the productivity augmenting effects of higher levels of human capital are undoubtedly much smaller than in skilled manual, technical or white collar occupations. This suggests that the incentives for parastatals to ‘cream’ would increase with occupational level and that, correspondingly, the premium paid to attract the best candidates would be larger for workers with relatively high levels of qualifications.

A similar prediction regarding the relationship between levels of education and experience, and the magnitude of the wage premium paid by parastatals flows from the monopoly rent hypothesis. If parastatal managers choose to distribute to employees rents earned in product markets, we might expect the

\(^4\)The finding that most of the difference between ownership categories is in the constant rather than in the slope of the earnings functions is further maintained by an F-test comparing this equation with a restricted specification where only the intercept and regional parameters are entered interactively. The F-test strongly rejects the hypothesis that the addition of the other interactive terms adds to the explanatory power of the model. Also note that the results from estimating the interactive equation suggest a larger premium to public employment than was indicated by the results of section 2. However, the interactive estimates are subject to far greater variance due to the high degree of collinearity between all the interactive terms of a given employer type and, therefore, the magnitudes of these different estimates may be more similar than it at first appears.
wage premium to be higher among the best qualified workers who after all include within their ranks the very managers making the distributional decisions.

Our third hypothesis was that the premium paid by parastatals was a residual of the price paid by former multinationals to obtain acceptance in local markets. If foreign firms did pay a premium to avoid charges of exploitation we might expect the premium to be as big or bigger at the large base of the occupational pyramid as at the small pinnacle. This prediction is the opposite of the predictions generated by the first two hypotheses. The estimated interactive regression indicates that in percentage terms the premium paid by parastatals to workers with very low levels of qualifications is as great as the premium paid to highly qualified workers. The results therefore lend support to the third hypothesis.

The location variable is the exception to the generalization that the slopes of the earnings functions are constant across ownership categories. Privately owned establishments pay workers in Dar es Salaam substantially more than employees in other towns with the same qualifications. Presumably this is because in the capital city the cost of living is higher or because the labor market is tighter. The government does not pay higher wages to workers in Dar, \( bD - c(D \cdot Go) \geq 0 \), presumably because the centrally administered wage structure is insensitive to regional differences in the cost of living or in market conditions. Parastatals meanwhile also offer a Dar-es-Salaam wage premium. This may reflect a responsiveness to local labor demand conditions similar to that exhibited by private firms. This in turn may reflect the prior multinational and hence private sector status of many of these enterprises.\(^5\)

4. Decomposition of gross wage differentials and conclusions

\( \beta \) can be a misleading indicator of the magnitude of wage differentials between ownership categories when there are differences between categories in wage structures (coefficients in separate earnings functions). Though we have shown these differences to be small our best estimate of wage differentials should nevertheless incorporate them. Table 7 summarizes the results of the simulation exercise for representative private, government and parastatal sector employees (those with the mean characteristics of all workers in their ownership category) which allows us to decompose gross wage differentials into the component explained by various differences in characteristics \((E)\) and the remainder \((R)\) which results from differences in earnings functions.

\(^5\)Note that the magnitude of the location parameter in the aggregate wage equation of section 2 is a weighted average of what we have now determined to be the separate impact of Dar employment according to employer. The magnitude of the location coefficient in the interactive equation is, therefore, a more accurate measure of market determined inter-urban earnings differentials.
Table 7
The contribution of differences in labor force composition to the explanation of gross wage differentials between ownership categories.

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( W_{Gr} )</td>
<td>596</td>
<td>409</td>
<td>263</td>
<td>409</td>
<td>263</td>
<td>396</td>
</tr>
<tr>
<td>( W_{Pr} )</td>
<td>263</td>
<td>409</td>
<td>263</td>
<td>409</td>
<td>396</td>
<td>263</td>
</tr>
<tr>
<td>( G = W_{Gr} - W_{Pr} )</td>
<td>133</td>
<td>146</td>
<td>13</td>
<td>146</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \beta = \frac{W_{Gr} - W_{Pr}}{W_{Pr}} )</td>
<td>51%</td>
<td>56%</td>
<td>3%</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \beta = \frac{W_{Pr} - W_{Pa}}{W_{Pa}} )</td>
<td>21%</td>
<td>25%</td>
<td>21%</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wage structure

<table>
<thead>
<tr>
<th></th>
<th>( Pr )</th>
<th>( Go )</th>
<th>( Pr )</th>
<th>( Pa )</th>
<th>( Go )</th>
<th>( Pa )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution of differences of characteristics as a percentage of ( G ):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education ((E_1 + E_2))</td>
<td>58.4</td>
<td>60.2</td>
<td>23.6</td>
<td>24.2</td>
<td>-101.4</td>
<td>-105.1</td>
</tr>
<tr>
<td>Experience ((L + L^2))</td>
<td>9.8</td>
<td>1.1</td>
<td>8.4</td>
<td>11.0</td>
<td>-2.5</td>
<td>8.8</td>
</tr>
<tr>
<td>Age ((A))</td>
<td>8.7</td>
<td>10.2</td>
<td>10.1</td>
<td>8.4</td>
<td>17.5</td>
<td>12.5</td>
</tr>
<tr>
<td>Location ((L))</td>
<td>-2.5</td>
<td>-0.1</td>
<td>7.3</td>
<td>4.5</td>
<td>2.5</td>
<td>25.0</td>
</tr>
<tr>
<td>Total ((E)):</td>
<td>74.4</td>
<td>71.4</td>
<td>49.4</td>
<td>48.1</td>
<td>-83.9</td>
<td>-58.8</td>
</tr>
<tr>
<td>Residual contribution ((R)):</td>
<td>25.6</td>
<td>28.6</td>
<td>50.6</td>
<td>51.9</td>
<td>183.9</td>
<td>158.8</td>
</tr>
<tr>
<td>Wage difference after accounting for differences in characteristics (sh mth)</td>
<td>34.0</td>
<td>37.9</td>
<td>72.8</td>
<td>75.8</td>
<td>23.8</td>
<td>20.6</td>
</tr>
</tbody>
</table>

Government employees earned, on average, 51\% more than private sector workers. Columns (1) and (2) indicate that differences in characteristics account for roughly 73\% of this large differential. The much higher educational attainment of our representative government employee, a reflection of the greater white collar intensity of labor demand in the government than in the private sector accounts for fully 85\% of \( E \). After accounting for differences in characteristics our representative government worker earns some 36\% per month (14\%\%) more than his private sector counterpart.

The gross differential in mean wages (146\% - 56\%\%) between private and parastatal employees is larger still than the government–private differential. In this case, however, a markedly smaller proportion, roughly half, is explained by differences in characteristics. Differences in educational attainment contribute most to \( E \), followed in descending order of magnitude of contribution, by the greater experience and age of parastatal workers and their greater concentration in the capital city. The remaining half \( R \) of the differential, implying a difference of some 75\% a month or 29\%\%, is the premium our representative worker earns simply for being a parastatal rather than a private sector employee.
Given that differences in characteristics explain more of the government-private than of the parastatal-private differential in mean wages, we would expect differences in characteristics to explain the small advantage the ‘typical’ parastatal worker has in mean wages relative to government workers. In fact, this small advantage is more than explained by differences in characteristics. The proportion of employees who are high paid white collar workers is nearly twice as high in the government as in the parastatal sector. As a corollary government workers have a higher level of educational attainment. If the better qualified government employees were paid according to the parastatal wage structure they would actually earn more, on average, than parastatal employees. This is indicated by the negative sign of the estimated total contribution of differences in composition to the gross wage differential (E).

In conclusion our analysis of public-private earnings differentials in urban Tanzania in 1971 suggests that worker characteristics cannot account for all of the differences in earnings between the public and private sectors of the formal economy. Both government and parastatal employers pay more than wage rates prevailing in the private sector. Public sector employers do not appear to be acting simply as wage takers. The government paid a modest premium while parastatal workers earned 29% more than private sector workers with the same characteristics. A definitive test of competing hypotheses was not possible due to the crudeness of our human capital measures and our inability to control for job attributes and hours worked. Nonetheless, the evidence pertaining to differences between ownership categories in the structure of earnings suggests that the large parastatal premium was a residual of the premium paid by multinational firms prior to their nationalization. Whether the labor market distortion indicated by the parastatal premium persisted throughout the 1970’s has important implications both for reasons of allocative efficiency and hence, economic growth, and for the distribution of income in Tanzania. Analysis of changes over time in public-private wage differentials using comparable data and similar techniques is currently underway.

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