Estimating public and private sectors' union wage effects in Ghana: is there a disparity?

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Abstract

Purpose – This study seeks to estimate union wage effect in the public and private sectors of Ghana, respectively. It also seeks to ascertain whether the union wage effect in the two sectors varies.
Design/methodology/approach – The authors use data from the Ghana Living Standards Survey 6 (GLSS 6, 2012/2013) and Ghana Labour Force Survey (GLFS, 2015). In terms of estimation technique, the authors employ the Blinder–Oaxaca decomposition technique to estimate union wage effect in public and private sectors, respectively.
Findings – The findings indicate that union wage effect in the public sector is positive and higher relative to that of the private sector.
Practical implications – The findings imply that strict enforcement of Section 82 of Labour Act 2003 (Act 651) will curb the political influence of public sector unions over their employer (Government).
Originality/value – This research paper has not been presented to any journal for publication and it is the authors' original work.
Peer review – The peer review history for this article is available at: https://publons.com/publon/10.1108/IJSE-01-2023-0045

Keywords Private sector, Public sector, Unions, Collective bargaining and wages
Paper type Research paper

1. Introduction

The public sector in Africa is dominated by formal-contract jobs, whilst the private sector is deeply saturated with informal jobs (i.e. jobs without formal arrangements). Furthermore, International Labour Office, ILO (2018) revealed that 86% of all jobs in Africa are in the informal economy, which compares to only 25% of those in Europe and Central Asia put together. This indirectly suggests that the private sector in Africa is larger relative to their public counterpart. International Labour Organization (ILO) statistics indicate that out of estimated total employed persons of 4, 306, 498 in Burkina Faso in 2018, only 7.4% were employed by the public sector. The distributional trend is the same in Nigeria, where out of estimated total employed persons of 41, 587, 553 in 2019, only 8.6% were employed by the public sector. Similarly, in Ghana, it is revealed that the public sector employed 776,000

JEL Classification — D02, J01, J08, J31, J51

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persons (representing only 8.1% of total employed persons), whilst the private sector employed 8,804,000 persons, which represented 91.9% of all employed persons (2017 ILO Estimates). Thus, the private sector, which is overconcentrated with informal jobs, is larger in size relative to their public counterpart dominated by formal jobs.

ILO conventions 87 and 98 mandate employees in every enterprise, whether private or public, to freely form associations (herein referred to as trade unions) to protect their collective interests at the workplace. Consistent with these conventions, Section 79 of the current Labour Act of Ghana (Act 651, 2003) empowers every employee in Ghana, be it private or public sector employee, to form or join a trade union of their choice for the promotion and protection of their economic and social interests. On the other hand, unions' existence in the public sector is more pervasive compared to the private sector (Hirsch and Macpherson, 2003; Disalvo, 2010; Hirsch, 2013). This is because in most countries, employment to the public sector is tied to union membership. For instance, Section 45 of the Civil Service Interim Regulations of Ghana (1960) allows every employee in the public sector (both junior and senior staff) to compulsorily join the trade union present at their workplace. Since the establishment of this regulation, public sector employment has been compulsorily tied to union membership. Thus, unlike public sector employees, union membership is voluntary for private sector employees.

In recent times, there has been a growing interest of unions in the mobilization of employees in the informal sector in order to protect them against exploitation. In 2011, the ILO passed out convention 189 to shield all domestic workers from human right abuses and empower such workers to form or join trade unions for the protection of their rights in the employment relationship. In line with this convention, the Trades Union Congress of Ghana has attempted to organize professional associations in the informal sector to protect them from unlawful treatment by government (Adu-Amankwah, 1999; Baah, 2005). These professional bodies include Ghana Private Road Transport Union (GPRTU), Ghana Hairdressers and Beauticians Association (GHABA), Ghana Batik, Tie and Dye Association (GBTDA), etc.

Unions in Ghana have also attempted to mobilize employees in formal private sector such as commercial banks, insurance enterprises, brokerage firms, manufacturing enterprises etc. For instance, the Union of Industry, Commerce and Finance Workers (UNICOF) was established in 2003 to mobilize workers in commercial banks, insurance enterprises, commercial and manufacturing firms. Its aims are to educate and develop the skills of their members, increase productivity for employers and achieve better working conditions and job security for their members [1].

However, the difference in union concentration between the public and private sectors has implication for unions' collective bargaining strength in these two sectors. According to Klandermans (1997) and Barling *et al.* (1992), collective bargaining strength of unions (which depends on union coverage) affects unions' ability to organize for collective action against exploitation. Thus, the higher union concentration in the public sector relative to the private sector may lead to a higher bargaining strength of public sector unions relative to private sector unions. This is also likely to engender differences in the union wage effect between the two sectors. Thus, using data from the sixth round of the Ghana Living Standards Survey (2012/2013) and 2015 labor force survey, this study seeks to empirically estimate union wage effect in the public and private sectors respectively. Findings of the study will help strengthen existing legislation regarding trade unionism in Ghana.

The rest of the paper proceeds in the following structure. Section 2 reviews the extant literature on the subject, whilst section 3 presents overview of union coverage in public and private sectors of Ghana. Section 4 presents the methodology and data sources. Results are discussed in Section 5 whilst the study ends with summary, conclusion and policy recommendation in Section 6.

2. Literature review

On the theoretical front, several attempts have been made by Scholars to seek answers to the question of how a trade union decides on the level of its wage demands during negotiations. In 1944, an eminent Labor Economist, John Dunlop, constructed a model which viewed a labor union as a profit-maximizing firm seeking to maximize objectives such as the size of the union membership, the wage bill, economic rents of the membership as well as the size of the wage rate (Dunlop, 1944). However, the model is not without a weakness; the portrayal of a union as a profit-maximizing firm is unrealistic. Thus, in an attempt to address this weakness, Ross (1948) portrays a union as a political institution operating in an economic environment. Hence, Ross' model of union wage negotiation is more of a political postulation than an economic thought. In this vein, he argues that the political structure of the union consists of two main groups; an elected set of union leaders and the rank-and-file members. According to Ross, whilst the responsibility of formulating union's wage policy rests on the union leadership, it must institute a wage policy that maximizes the welfare of the rank and file, which at the same time ensures the survival and growth of the union. Furthermore, he opines that the wage policy of the union leadership is one that always ensures the perpetuation of its leadership in office.

Despite Ross' theory being the masterpiece of analysis with respect to political dynamics of union decision making, its flaw lies in the fact that it is realistic rather than predictive (Kaufman, 1989). Hence, the model lacks predictability. Moreover, many Economists have disputed Ross' argument that unions undermine the employment effect of their wage demands (ibid.), leading to the construction of a refined model known as the Median Voter Model by Black (1948) and Arrow (1950). Their model defines a Median Voter as the union member in the bargaining unit, who occupies the median or middle position in the seniority distribution. The Median Voter Model therefore postulates that the union leadership in its quest to garner the support of the rank and file with respect to its wage policy, would always propose a wage bargaining policy that meets the preference of the Median Voter.

Other models have also attempted to conceptualize union wage bargaining policy. These include the Monopoly and the Efficient Contract Models. The former assumes that the union fixes the wage rate for the firm to adjust its employment level (Fellner, 1949) whilst the latter argues that the optimal combination of wage and employment of the former is neither efficient nor Pareto optimal (Leontief, 1946). Thus, according to Leontief (1946), some other bargaining outcome must exist that would yield to both a union and a firm a relatively higher level of utility.

In furtherance of the Dunlop Model, Norcross (2011) argues that the magnitude of a union's bargaining effect on wages and employment depends on the type of sector that it operates in. Unions in the private sector are able to increase wages for their members through negotiation, which results in fewer jobs for nonunion employees, low corporate profits and high consumer prices. On the other hand, unions in the public sector are able to negotiate for increased wages for their members without a higher decline in employment (ibid.). This is made possible through employer negotiations as well as political, legislative or regulatory processes (Freeman, 1984).

However, on the empirical front, few studies have attempted to estimate the relative effects of unions in the private and public sectors on wages. The results of such studies are inconclusive; whilst some of the studies find positive wage premium associated with unionism in the public sector and even higher than that of the private sector (Blanchflower and Bryson, 2007; Card *et al.*, 2018), other studies find a contrary result (Moore and Raisian, 1987; Bitzan, 2010). This result could be attributed to the reason that public sector unions are more capable of mobilizing for protests/strikes than private sector unions (Jansson and Uba, 2023). On the contrary, Amankwaah (2023) finds that public sector unions in Ghana, particularly University Teachers Association of Ghana (UTAG), find it difficult to mobilize their members for effective negotiations.

Some studies have also examined the relationship between private and public sector wages. Most of these studies conclude that the average wage in the public sector is higher than that of the private sector (Smith, 1976; Krueger, 1988; Mueller, 2000; Abdallah *et al.*,

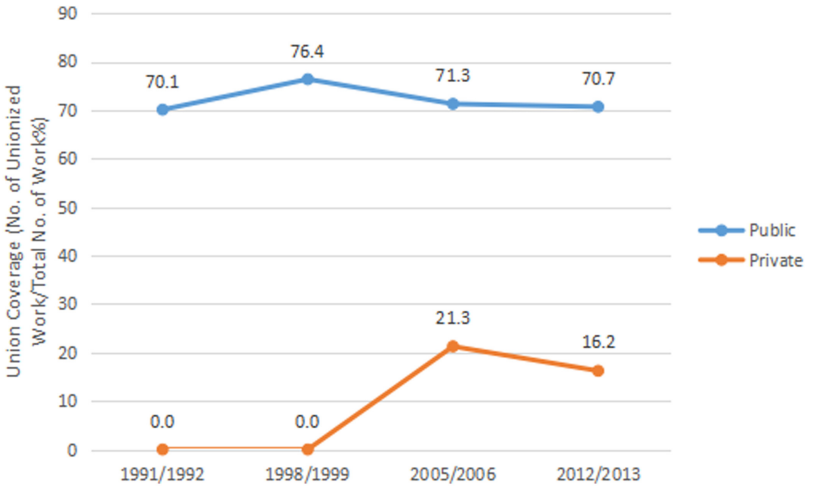
2023). Disalvo (2010) attributes this to the growing number of unions in the public sector vis-a-vis the declining number of unions in the private sector. On the other hand, a related study on OECD countries concludes that public sector wage growth positively influences private sector wage growth (Afonso and Gomes, 2021). In Ghana, Ampofo and Tchatoka (2018) analyze the impact of the Single Spine Pay Policy (SSPP) on public-private sector wage differentials using a quantile treatment effect approach based on a difference-in-difference estimation. They find that the SSPP is yet to reduce the pay gap between the public and private sectors across the entire distribution of earnings in Ghana. However, they observe improvement only at the lower tail of the distribution of earnings. The limitation of their study is that it ignores the role that unions play in causing a wedge between public and private sector wages. Fanfani (2020) finds that among private-sector employees in Italy, an increase in contractual or negotiated pay leads to increase in actual pay levels but has a negative effect on employment. This finding is consistent with the postulation by Norcross (2011) that a high negotiated wage in the private sector could lead to a massive reduction in employment.

The survey of the Ghanaian literature indicates that there have not been studies on the comparison between union wage effects in the private and public sectors respectively. However, a few of the existing studies examine the effect of trade unions on wages in general (Teal, 1999; Verner, 1999; Blunch and Verner, 2001, 2004; Baah, 2005). Also, a recent study by Owusu-Afriyie *et al.* (2023) attempts to estimate the union wage effect in Ghana but ignores the heterogeneity that exists between private and public sector unions in terms of collective bargaining strength and its resultant effect on wages. In addition to this lacuna in the literature, the existing studies on the subject matter (i.e. Blanchflower and Bryson, 2007; Card *et al.*, 2018; Moore and Raisian, 1987 among others) are also mainly based on developed labor market setting and also antiquated, with limited focus on developing countries' labor market. Specifically, none of the studies conducted on Ghana, as far as the literature survey of this study is concerned, attempts to measure and compare union wage effect in the private sector with union wage effect in the public sector. The existing empirical studies conducted on Ghana implicitly assume symmetric union wage effect for all employees, regardless of sector. However, unions' bargaining/negotiations may affect wages in the private and public sectors differently. Thus, based on the Dunlop Model and the conceptual argument by Norcross (2011), this study seeks to estimate and compare the union wage effects in public and private sectors of Ghana using the Blinder–Oaxaca and the Unconditional Quantile Regression decomposition techniques.

3. Overview of disparities in union coverage between public and private sectors

Unionism in the public and private formal sectors has undergone some fluctuations over the years. Figure 1 indicates that union coverage has steadily declined in both public and private sectors since 2005/2006. Specifically, union coverage rate has been higher in the public sector in relation to the private sector but worst in the informal sector. This trajectory may be explained by the Civil Service Interim Regulations, 1960 (Section 45), which allows every employee in the public sector, both junior and senior staff, to compulsorily join the trade union present at their workplace. Thus, unlike employees in the private sector, union membership is compulsory for most employees in the public sector of Ghana. However, union membership in the private sector is voluntary.

Furthermore, most private sector jobs in Ghana are informal in nature and mainly characterized by self-employment. Figure 1 further reveals that the gap in union coverage between the public and private sectors has declined slightly since 2005/2006, indicating that the Ghana Trades Union Congress' effort to organize in the private sector has been more efficient than as it was in the past.



Source(s): Authors' own creation

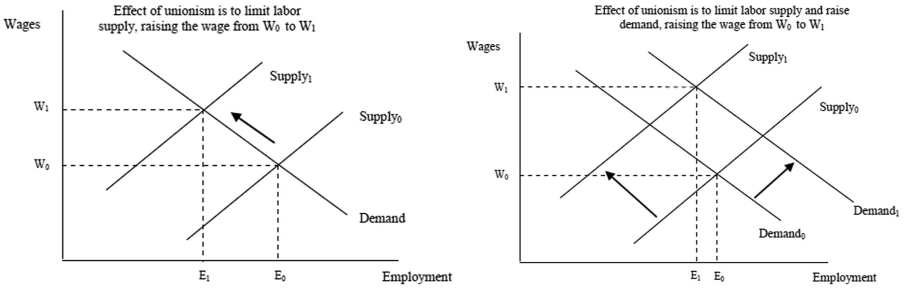
Figure 1. Trend of union coverage in the formal sector (private versus public sector), from 1991 to 2013

4. Methodology and data

4.1 Conceptual/theoretical framework

The theoretical underpinnings of this study are jointly based on the Dunlop Model of union wage bargaining and the conceptual argument by Norcross (2011), as discussed under literature review. In entirety, Figure 2a and 2b highlight the conceptual framework of this study.

While the Dunlop Model of Union Bargaining admits that collective bargaining maximizes wages (regardless of sector), Norcross (2011) depicts with labor demand and supply curves (see Figure 2a and b) that the positive effect of union bargaining on wages in the public sector is more pronounced than in the private sector. This disparity, according to Freeman (1984) and Disalvo (2010), could be attributed to the reason that unions in the public sector employ a mix of negotiations (i.e. collective bargaining), political, legislative and regulatory processes to agitate for increment in wages for their members, whilst their counterparts in the private sector only have one approach (i.e. negotiations or collective bargaining) to achieve same objective.



Source(s): Figure courtesy of Norcross 2011

Figure 2. Union wage effects in the private and public sectors

In addition to the argument by the Dunlop Model and Norcross (2011), certain employment Acts of Ghana put public-sector employees at a more advantageous position (in terms of earning decent wage/salary) relative to their counterparts in the public sector. For instance, the Fair Wages and Salaries Commission Act, 2007 (Act 737) seeks to ensure "fair, transparent and systematic implementation of the Government public service pay policy". This Act does not extend to private-sector employees. Furthermore, Section 112 (1a) of Labour Act 2003 (Act 651) calls for the determination of a daily national minimum wage by the National Tripartite Committee. However, in most cases, the implementation of the daily minimum wage is only effective in the public sector but not in the private sector due to high level of informality in the sector (Ghosheh, 2013; Benassi, 2011). On the contrary, Section 68 of Labour Act 2003 (Act 651) advocates for "equal pay for equal work without distinction of any kind". Similarly, this legal provision is not practically enforced in the private sector due to high level of informality.

However, the resultant effect of wage increment on employment in the public sector is inconclusive. On the other hand, the resultant effect of wage increment on employment in the private sector is absolutely negative, from E0 to E1 (see Figure 2a). Our study is only limited to wage implications of union bargaining in the public sector vis-à-vis the private sector.

Furthermore, in terms of function, the difference that exists between unions in the two distinct sectors is that unions in the private sector act as a labor cartel within the economy and thus, are able to influence firms' profits, labor supply, consumer prices and economic growth, whereas their counterparts in the public sector operate as a monopoly provider of labor within a bureaucratic-political realm (Troy, 2004). Hence, unlike unions in the private sector, those in the public sector have the tendency to undermine the sovereignty of the state since they are able to push wage demands via political lobbying of their "employer-sponsors" or politicians (ibid.).

4.2 Empirical model and estimation technique

We apply the Blinder–Oaxaca decomposition technique by Blinder (1973) and Oaxaca (1973) to estimate the union-nonunion wage differentials and the union wage effects in the public and private sectors respectively. This is because unlike other decomposition techniques (i.e. Residual Imputation, Conditional Quantiles and the Reweighting approaches), the Blinder–Oaxaca decomposition technique has the tendency to minimize the selectivity bias problem associated with union wage effects in the public and private sectors respectively (Baah-Boateng, 2012; Baah-Boateng *et al.*, 2022; Owusu-Afriyie, 2021). Thus, to apply this technique, we specify our empirical ordinary least squares (OLS) equations as follows:

$$W_{Ui} = X'_{Ui}\beta_U + \varepsilon_{Ui} \tag{1}$$

$$W_{Ni} = X'_{Ni}\beta_N + \varepsilon_{Ni} \tag{2}$$

Equation 1 represents the wage equation of employees with a trade union present at the workplace (in private and public sectors, respectively), whilst equation 2 represents the wage equation of employees without a trade union at the workplace (in private and public sectors respectively).

The subscripts, U and N, denote a trade union present at the workplace and no trade union at the workplace, respectively.

W_{Ui} and W_{Ni} are the natural logs of real monthly earnings for the ith employee with a trade union present at the workplace (i.e. union employee) and ith employee without a trade union present at the workplace (non-union employee), respectively.

X_{Ui} and X_{Ni} are the vectors of explanatory variables such as work experience, hours of work, household headship status, level of educational attainment, gender, formality status of employment, firm size, age of employees, and industry of employment for union and nonunion employees respectively.

β_U and β_N are vectors of coefficients for union and nonunion employees respectively, whilst ε_{Ui} and ε_{Ni} are the error terms for the union and nonunion employees' wage equations, which are assumed to be normally distributed.

Based on equations 1 and 2, the Blinder–Oaxaca decomposition equation is specified as follows:

$$\overline{W_U} - \overline{W_N} = \left(\overline{X_U} - \overline{X_N}\right)\prime\widehat{\beta}_N + \overline{X'}_U\left(\widehat{\beta}_U - \widehat{\beta}_N\right) \quad (3)$$

Where: $\overline{W_U} - \overline{W_N}$ is defined as the union-nonunion wage differential, $(\overline{W_U} - \overline{W_N})\prime\widehat{\beta}_N$ is the explained part of the differential (i.e. differential due to differences in characteristics between union and nonunion employees) and $\overline{X'}_U(\widehat{\beta}_U - \widehat{\beta}_N)$ is defined as the unexplained part of the differential due to differences in wage structure between union and nonunion employees (which is also referred to in the literature as union effect). We estimate equation 3 for private and public sectors respectively in order to find the relative union wage effects in the two sectors. In estimating equation 3 for the public and private sectors respectively, we employ the Oaxaca command (in STATA) with selectivity correction term to rid our OLS of any sample selection bias. We thus compare the union wage effect, $\overline{X'}_U(\widehat{\beta}_U - \widehat{\beta}_N)$, in the private sector with that of the public sector to draw conclusion about the relative effect of unions on private and public sector wages. Based on the theoretical differences between public-sector unions and private-sector unions (as discussed under literature review), we expect the union wage effect to be higher in the public sector than in the private sector.

4.3 Data and descriptive statistics

The data for this study are employed from the sixth round of the Ghana Living Standards Survey (GLSS 6) and 2015 Ghana Labor Force Survey (2015 GLFS). They are both nationally representative datasets containing information on wages of employees, union presence status of enterprises, educational background of employees, gender of employees, sector of employees, location of employment (rural and urban), formality status of employment among others. Table 1 further highlights the characteristics of these datasets.

It is observed in Table 3 that average real monthly earning is higher in the public sector than the private sector. This confirms the findings by Smith (1976), Krueger (1988) and Mueller (2000) that wages are higher in the public sector than in the private sector. Furthermore, it could be observed from the descriptive statistics in Table 2 that union presence/coverage in the public sector is 71.4%, whilst union presence/coverage in the private sector is only 16.3% (i.e. 2012/2013 sample). On the other hand, Table 3 indicates that union coverage in the public sector is 64.0%, whilst union coverage in the private sector is only 6.7% (2015 sample data). Thus, similar to the trend in Figure 2, union presence/coverage in the public sector is higher relative to the private sector. Collective bargaining strength of public-sector unions is therefore expected to be higher than that of private-sector counterparts.

Furthermore, average hour of work per week in the private sector is greater than that of the public sector (Table 3). It is therefore not surprising that the average hour of work per

	GLSS 6 (2012/2013)	GLFS 2015
Sampled households	18,000	5,838
Sampled household members	72,372 *(6, 101)*	19,367 *(6, 529)*
Enumeration areas	1,200	———

Note(s): Sample size employed for the study is in parenthesis
Source(s): Authors' own creation

Table 1.
Sources of data extracted for the study

	GLSS 6 (2012/2013)							
	Public sector				Private sector			
	No. of observations	Mean	Min	Max	No. of observations	Mean	Min	Max
Real monthly earnings (dependent variable)	1,700	1.982	0	133.973	4,401	0.827	0	63.637
Work experience	1,692	10.663	0	85	4,376	5.765	0	59
Union status of enterprise								
Union present	1,690	0.714	0	1	4,368	0.163	0	1
Union absent	1,690	0.286	0	1	4,368	0.837	0	1
Age	1,700	38.744	18	78	4,401	32.498	15	99
Hours of work per week	1,620	41.691	0	120	4,225	49.527	0	120
Status in household								
Head	1,700	0.708	0	1	4,401	0.576	0	1
Member	1,700	0.292	0	1	4,401	0.424	0	1
Region: Accra	1,700	0.159	0	1	4,401	0.274	0	1
Other	1,700	0.841	0	1	4,401	0.726	0	1
Level of educational attainment								
No education	1,688	0.003	0	1	4,297	0.009	0	1
Basic	1,688	0.229	0	1	4,297	0.667	0	1
Secondary	1,688	0.221	0	1	4,297	0.233	0	1
Tertiary	1,688	0.547	0	1	4,297	0.091	0	1
Gender: male	1,700	0.623	0	1	4,401	0.678	0	1
Female	1,700	0.377	0	1	4,401	0.322	0	1
Formality status of employment								
Formal	1,692	0.858	0	1	4,371	0.238	0	1
Informal	1,692	0.142	0	1	4,371	0.762	0	1
Sector of employment								
Agricultural	1,700	0.021	0	1	4,397	0.064	0	1
Industrial	1,700	0.028	0	1	4,397	0.305	0	1
Services	1,700	0.951	0	1	4,397	0.631	0	1

Source(s): Authors' own creation

Table 2. Descriptive statistics of dependent and independent variables (GLSS 6)

week in the public sector is not significantly higher than the prescribed forty (40) hours of work per week stated under Section 33 of Labour 2003 (Act 651), since labor laws are strictly enforced in the public sector.

5. Discussion of empirical results

The unexplained part of the union-nonunion wage gap presents an accurate measure of unions' effect on wages, if differences in observable characteristics between workers in union and nonunion enterprises are controlled (Baah, 2005). Thus, the discussion centers on the unexplained part of the union-nonunion wage gap/differential, also known as union wage effect. Estimates based on the GLSS 6 data show that the unexplained gap is not statistically significant in both the private and public sectors (Table 4). Although not statistically significant in the two sectors, the union wage effect is 0.047 log points (i.e. represents about 13.7% of the union-nonunion wage gap) in the public sector, whereas in the private sector, it is estimated at 0.035 log points (i.e. represents about 8.8% of the union-nonunion wage gap)

	GLFS (2015)							
	Public sector				Private sector			
Work experience	491	9.303	0	40	5,203	11.133	0	99
Union status of enterprise								
Union present	491	0.640	0	1	5,203	0.067	0	1
Union absent	491	0.360	0	1	5,203	0.933	0	1
Age	496	37.157	15	80	6,033	39.420	15	99
Hours of work per week	496	34.538	0	98	6,033	32.759	0	99
Status in household								
Head	496	0.784	0	1	6,033	0.634	0	1
Member	496	0.216	0	1	6,033	0.366	0	1
Region: Accra	496	0.111	0	1	6,033	0.125	0	1
Other	496	0.889	0	1	6,033	0.875	0	1
Level of educational attainment								
No education	485	0.039	0	1	4,155	0.355	0	1
Basic	485	0.105	0	1	4,155	0.406	0	1
Secondary	485	0.148	0	1	4,155	0.177	0	1
Tertiary	485	0.707	0	1	4,155	0.061	0	1
Gender: male	496	0.556	0	1	6,033	0.454	0	1
Female	496	0.444	0	1	6,033	0.546	0	1
Formality status of employment								
Formal	465	0.882	0	1	753	0.382	0	1
Informal	465	0.118	0	1	753	0.618	0	1
Sector of employment								
Agricultural	495	0.010	0	1	6,025	0.432	0	1
Industrial	495	0.018	0	1	6,025	0.184	0	1
Services	495	0.972	0	1	6,025	0.384	0	1

Source(s): Authors' own creation

Table 3. Descriptive statistics of dependent and independent variables (GLFS, 2015)

[Table 4]. Thus, the estimates are consistent with literature. According to some studies in the literature, union effect on wages in the public sector is higher compared to the private sector (Card *et al.*, 2018; Blanchflower and Bryson, 2007). This implies that public sector unions exert a higher positive effect on wages of their members through collective bargaining than private sector unions. This is consistent with the theoretical postulation by Norcross (2011).

Furthermore, the Blinder–Oaxaca estimates in Table 4 based on the 2015 GLFS sample data reveal that, the union wage effect is statistically significant (i.e. at 1% level) in the public sector but statistically insignificant in the private sector. Specifically, the union wage effect in the public sector is estimated at 0.211 log points (which represents 44.5% of the union-nonunion wage gap), whereas in the private sector, it is estimated at 0.088 log points (which represents 34.9% of the union-nonunion wage gap) [Table 4]. These estimates are also consistent with estimates based on the GLSS 6 sample data (Table 4). Thus, our results are robust to the different datasets. Furthermore, for the purpose of checking the robustness of our results, we estimate the union wage effect using the unconditional quantile decomposition technique. Similarly, the estimates based on that technique indicate that public sector union wage effect is positive and higher than private sector union wage effect (see Table A1). This reinforces our results obtained from the Blinder–Oaxaca decomposition technique.

Our finding could partly be explained by the higher union coverage in the public sector in relation to the public sector (see Figure 1), which makes public sector unions have a higher

	GLSS 6 (2012/2013)		GLFS (2015)	
	Public sector			
	Selectivity uncorrected	Selectivity corrected	Selectivity uncorrected	Selectivity corrected
Union-nonunion wage gap	0.458***	0.342***	0.474***	0.474***
$[(\overline{W_U} - \overline{W_N})]$	(6.49)	(4.77)	(4.94)	(4.94)
Explained gap	0.401***	0.295***	0.266***	0.263***
$[\widehat{\beta_N}'(\overline{X_U} - \overline{X_N})]$	(8.68)	(6.5)	(4.42)	(4.34)
Unexplained gap (union effect)	0.057	0.047	0.208***	0.211***
$[(\widehat{\beta}_U - \widehat{\beta}_N)'\overline{X_U}]$	(1.09)	(0.86)	(2.62)	(2.68)
Private sector				
Union-nonunion wage gap	0.435***	0.397***	0.252**	0.252**
$[(\overline{W_U} - \overline{W_N})]$	(8.63)	(7.33)	(2.53)	(2.53)
Explained gap	0.403***	0.363***	0.164***	0.164***
$[\widehat{\beta_N}'(\overline{X_U} - \overline{X_N})]$	(13.13)	(10.73)	(3.09)	(3.09)
Unexplained gap (union effect)	0.032	0.035	0.088	0.088
$[(\widehat{\beta}_U - \widehat{\beta}_N)'\overline{X_U}]$	(0.81)	(0.83)	(1.09)	(1.09)
All				
Union-nonunion wage gap	0.689***	0.639***	14.505	14.505
$[(\overline{W_U} - \overline{W_N})]$	(20.86)	(18.11)	(1.17)	(1.17)
Explained gap	0.629***	0.583***	8.902**	8.893**
$[\widehat{\beta_N}'(\overline{X_U} - \overline{X_N})]$	(26.44)	(22.97)	(2.15)	(2.15)
Unexplained gap (union effect)	0.060**	0.056**	5.603	5.612
$[(\widehat{\beta}_U - \widehat{\beta}_N)'\overline{X_U}]$	(2.54)	(2.19)	(0.53)	(0.53)

Note(s): ***, ** and *means significant at 1, 5 and 10%, respectively. All Tables in parenthesis represent estimated Z ratios

Source(s): Authors' own creation

Table 4. Estimates of the public-sector union wage effect versus private-sector union wage effect (2012/2013 and 2015) using Blinder–Oaxaca decomposition

collective bargaining power than private sector unions. Furthermore, it has been established in the literature that union's bargaining strength is enhanced by high union coverage, which leads to high union wage premium (Freeman and Medoff, 1984; Lewis, 1986; Stewart, 1987; Forth and Neil, 2002). In addition, public sector unions are more capable of mobilizing for protests/strikes than private sector unions (Jansson and Uba, 2023).

In addition, public sector unions compared to private sector unions have a higher tendency to push their wage demands by influencing public election outcomes (Troy, 2004). Members of public sector unions elect their employer (i.e. the government) but those in private sector unions do not elect their employer (Freeman, 1984; Norcross, 2011). Thus, through their extensive political activity, members of public sector unions are able to elect the very politicians, who act as management or employers during collective bargaining. They deliberately select their employers, who sit with them at the bargaining table in a way that members of private sector unions cannot (Disalvo, 2010). This bestows on public sector unions extra bargaining advantage, which private sector unions do not have. Thus, this explains why the Ghana Trades Union Congress (TUC) mostly places its demands for wage increment on the negotiation table during electioneering years. Another plausible reason for

the higher union wage effect in the public sector relative to the private sector is that wage increment in the public sector due to collective bargaining effect is usually borne by tax payers whereas in the private sector, it is mostly borne by consumers (Kleiner, 2001; Elvander, 2002). Unions in the private sector therefore exercise more restraint relative to their counterparts in the public sector when bargaining for wage increment due to the resultant effect on commodity price and hence, their profitability level.

6. Summary, conclusion and policy recommendation

This study fills the dearth in the literature by examining the relative effects of unions on public and private sector wages. The study finds using Blinder–Oaxaca decomposition and Unconditionl Quantile Regression decomposition techniques that unions in the public sector exert a higher positive effect on wages of their members through collective bargaining than unions in the private sector do. This could be attributed to the high union coverage in the public sector relative to the private sector. In addition to the coverage advantage, unions in the public sector can push their wage demands by influencing the political process that select their employers or management (i.e. the government) to the negotiation table.

We therefore conclude that the higher positive effect that public sector unions exert on wages of their members relative to their counterparts in the private sector could worsen wage inequality between private sector and public sector employees. Hence, we recommend that Section 82 of Labour Act 2003 (Act 651) which states that "A trade union or employers' organization shall not be subject to the control of or be financially or materially aided by a political party" must be strictly enforced to limit the influence of unions in the public sector over election of political leaders, whom they usually negotiate with over their wage demands. This will minimize the collective bargaining advantage that public sector unions have over their private sector counterparts. Collective bargaining advantage on the path of public sector unions could manifest in the form of political lobbying, influence over labor laws and regulations, etc. Thus, enforcement of Labour Act 2003 (Act 651) will help to minimize the existing huge wage inequality between public sector and private sector employees and in the long run, minimize the menace of earnings inequality in the Ghanaian labor market.

Note

1. See website of UNICOF (www.unicofgh.org).

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Appendix

Table A1. Estimates of the public-sector union wage effect versus private-sector union wage effect (2012/2013 and 2015) using unconditional quantile decomposition

	GLSS 6 (2012/2013)			GLFS (2015)		
	Public sector					
	25th quantile	50th quantile	75th quantile	25th quantile	50th quantile	75th quantile
Union-nonunion wage gap	0.019	0.053	0.018	0.011	#	0.012
$[(\overline{W_U} - \overline{W_N})]$	(0.34)	(0.40)	(0.35)	(0.14)		(0.15)
Explained gap	−0.064***	0.004	−0.063***	−0.90	#	−0.092
$[\widehat{\beta}_N{}'(\overline{X_U} - \overline{X_N})]$	(−1.46)	(0.04)	(−1.45)	(−1.44)		(−1.45)
Unexplained gap (union effect)	0.083**	0.049	0.082**	0.102**	#	0.103**
$[(\widehat{\beta}_U - \widehat{\beta}_N)'\overline{X_U}]$	(2.27)	(0.40)	(2.28)	(2.12)		(2.11)
Private sector						
Union-nonunion wage gap	−0.125*** (−2.67)	#	−0.124*** (−2.68)	0.046 (0.48)	#	0.045 (0.48)
$[(\overline{W_U} - \overline{W_N})]$						
Explained gap	−0.045	#	−0.042	0.130***	#	0.129***
$[\widehat{\beta}_N{}'(\overline{X_U} - \overline{X_N})]$	(−1.02)		(−1.00)	(3.44)		(3.44)
Unexplained gap (union effect)	−0.080***	#	−0.079	−0.083	#	−0.082
$[(\widehat{\beta}_U - \widehat{\beta}_N)'\overline{X_U}]$	(−3.33)		(−3.32)	(−1.04)		(−1.03)

Note(s): ***, ** and *means significant at 1, 5 and 10%, respectively. All tables in parenthesis represent estimated Z ratios
#means decomposition regression cannot be estimated due to limited number of observations at the 50th quantile
Source(s): Authors' own creation