



PUBLIC AND PRIVATE SECTOR WAGE DIFFERENTIALS: EMPIRICAL EVIDENCE FROM TÜRKİYE

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ABSTRACT

Using microdata from the 2015 and 2022 Household Labor Force Survey, this study assesses public-private sector wage differentials in Türkiye. By presenting descriptive statistics, kernel density estimates, cumulative distribution functions, OLS regressions, Oaxaca-Blinder decompositions, and unconditional quantile approach through a sequence of methods, the analysis describes the average and distributional patterns in the wage disparities. Findings show a persistent wage advantage for those in the public sector, but the gap narrows over time. A large portion of the differential has been explained by observable features like education, occupational type, and geographic location, and the factor linked to sector-specific returns decline by 2022. There is some distributional evidence that suggests broad-spectrum heterogeneity along the wage scale: in 2015, the public sector premiums are largest around mid and the upper quantiles, but by 2022 they become more moderate and more evenly distributed. These changes indicate that there has been some convergence between the public and private sectors on rewarding worker characteristics and are indicative of changing wage-setting dynamics during this period. The results provide new insights in Türkiye about the development of wage structures, as well as the need to pay attention to the relationship between worker characteristics and their resulting returns in the distribution leading to wage gap analysis for labour-market policy decisions and public-sector compensation structuring.

Keywords: *Public-private wage differentials, Wage decomposition, Quantile decomposition, Labour market segmentation, Türkiye*

1. INTRODUCTION

In most of the countries the public sector employs several workers and is the largest employer by the number of workers in the jobs. The mechanism of pay determining the public sector influences the economy, both as an aggregate labour market and as a specific macroeconomic movement. Added to which, most workers believe public jobs are safer and better compensated than private-sector jobs. This idea derives from governments' objectives because they are intended to establish fairness and are exempt from the profit incentives that drive private firms (Bewley, 2006). Whereas public and private entities react to other incentives, control mechanisms, and financial pressures, they may be expected to design differential structures of pay-

ing. These differences in the operation of the two sectors are motivated to stimulate the applied research that attempts to find out why their wage differences exist (Gregory & Borland, 1999; Giordano et al., 2011; Depalo et al., 2015). The government pay systems are structured to help ensure that wages tend to cluster mostly together. As a result, workers with relatively low levels of skill earn more in the public sector than they would in private firms, as private firms' pay decisions are largely based on workers' specialized skills (Christofides & Michael, 2013; Lausev, 2014; Lucifora & Meurs, 2006). In the public sector, by contrast, wages are usually determined by standardized pay scales that emphasize pay levels based less on an individual's productivity or skills (Makhlouf et al., 2024). This structure can blunt the wage distribution, upgrading the relative status of lower-skilled workers. Public-sector wages, for the most part, are determined via collective bargaining processes (Frandsen, 2015) and government budgetary decisions (Porterba & Rueben, 1995), resulting in public sector adjustments being much slower than those in the private sector when it comes to short-run labour-market fluctuations. Findings from many advanced economies discuss how these forces work in labour markets. In nations with powerful unions and coordinated wage-raising, earnings don't fluctuate quite as much and tend to cluster more closely together (Christofides & Michael, 2013; Giordano et al., 2011). But these institutional characteristics can hold constraints on governments' ability to pay high-earning professionals well enough and then place upward pressure on the national wage bill over time. International evidence (Abdallah et al., 2023) points to the fact that differences between public-private wages result from the organization of wage-setting authority within society. A country-specific data (Couceiro de León & Dolado, 2023) study suggests that performance incentives and hiring processes are also significant predictors of these disparities (Belke et al., 2026). These results altogether contribute to explaining the disparities in wage structures between nations and give a sense of comparison for Türkiye. They also serve in providing some more context on how structured wage regimes and individualised wage differentials are shaped by wage structures and a segmented labour market in a particular developing country context of development.

In addition to its significance for labour economics, public-private differences in pay from a financial public perspective also have relevance from the perspective of public finance. Public pay for the public sector is a large and comparatively unchangeable piece of government spending, and chronic pay gap wages will affect the way wage-bill payments are managed, be that with respect to cost-effectiveness – fiscal integrity or a lot of things budgetary discipline. If public wages consistently outpace private-sector benchmarks, it can generate long-term pressures on expenditures, which diminishes the flexibility of fiscal policy when the economy is vulnerable. On the other hand, an ever-declining public-sector premium might indicate greater fiscal repression or changes to wage-setting priorities, something with broader implications for both recruitment and retention as well as the quality of public services. For these reasons, monitoring the dynamic progress of the public-private wage gap in the long run sheds light on labour-market dynamics, but also the more general macroeconomic context of wage-setting in which wage-setting occurs.

It is particularly critical to explore why this gap continues and how it changes through time in Türkiye, a nation whose public employment has been increasing with striking changes in labour-market conditions (Tansel, 2005; San & Polat, 2012). Akarçay-Gürbüz and Polat (2016) present a recent empirical investigation that reopens the question and finds that the gap between public and private wages remains stark. They also demonstrate that the magnitude of the gap is significantly different between men and women. However, unlike the extensive literature of developing economies, research on Türkiye is sparse, particularly to analyse the presence of wage gaps across the distribution and how wage gaps differ between timelines.

This study seeks to give a holistic analysis of public-private wage differentials in Türkiye

based on HLFS microdata from 2015 and 2022. And it responds to three questions: (i) Has the public-private wage gap narrowed between 2015 and 2022? (ii) How much is the discrepancy attributed to differences in characteristics of workers not wage setting at the sector level? (iii) What is the scale of these components in the wages? The analysis then starts by summarizing unconditional differences with descriptive details from the wages to distributional tools and uses a range of econometric techniques, Oaxaca–Blinder decomposition, ordinary least squares estimation and Chernozhukov et al., (2013) unconditional quantile decomposition. These complementary methodologies help this research in analysing differences in the worker qualities, differences in worker returns to those qualities and variation in those qualities across the wage distribution. Through this methodology, the analysis identifies more evidence to provide for the continuing stabilising effects of public employment on wages in Türkiye and whether the pressure from the private sector is having more and more influence over the returns for educational and skills-oriented workers. This is the structure of the paper. The current literature is described in section 2. Then in Section 3 the datasets are introduced, and descriptive data is reported. We present the method in Section 4, and empirical findings in Section 5. Ultimately, Section 6 reflects on key findings and their applicability to policy.

2. LITERATURE REVIEW

2.1. EVIDENCE ON AVERAGE PUBLIC-PRIVATE WAGE GAPS

Public-private wage differentials have been the subject of a rapidly growing body of research as public pay systems drive labour market outcomes, fiscal responsibility and fairness perceptions. Early studies mainly relied on comparisons of mean wages and OLS models which controlled for observable characteristics. They also found a single trend: public-sector wages are compressed. They tend to give comparatively high pay at the bottom of an overall distribution and lower but sometimes negative premiums for more talented workers. Gregory and Borland (1999) document this pattern across OECD countries. Giordano et al. (2011), based on harmonized EU-SILC data, show that public employees in Euro-area countries earn greater average wages and that part of that premium is based on differences in education, occupation, and demographics.

2.2. WAGE COMPRESSION AND DISTRIBUTIONAL EVIDENCE

Subsequent research goes beyond averages to consider wage-setting mechanisms. Typically, public pay is influenced by collective bargaining, centralisation, legislation constraining wage flexibility etc. Christofides and Michael (2013) and Lucifora and Meurs (2006) demonstrate that these institutions depress wages by lifting the pay of lower-skilled workers, while providing little return on investment for the work performed by higher-skilled employees. Quantile analysis proves that this is also the case: there are large premiums for people at the bottom of the distribution and penalties for them at the top compared to their private-sector peers (Lau-sev, 2014; Cousseiro de León and Dolado, 2023). Similar patterns are found outside Europe. In the United States, Borjas (2002) and Gittleman and Pierce (2014) show that once selection and occupational sorting are controlled, public employment provides more equitable if not higher earnings than private sector jobs. Women and minorities benefit most, while very well-paid professionals often earn less than in the private sector. Premiums are often greater in developing countries as well. In Latin America, public wages exceed private wages for most of the distribution (Baez et al., 2022), in part because of unionization and the public sector as “employer of last resort.” Panizza and Qiang (2005) and Mizala et al. (2011) cite strong premiums for women and low-skilled workers. Similar results are observed in South Asia: Nasir (2000) for Pakistan and Glinskaya and Lokshin (2007) for India report above average pay and job security in the public sector. There is evidence from Brazil (Cardozo and da Cunha, 2019)

that public pay lowers inequality by raising the lower end of the distribution, albeit leading to lower returns for high earners.

2. 3. INSTITUTIONS, WAGE-SETTING, AND FISCAL FRAMEWORKS

Public-private wage gaps are heavily influenced by institutional design. [Abdallah et al. \(2023\)](#) point towards cross-country variation attributed to varying degrees of decentralization, pay based on performance, and hiring policies. Nordic countries with centralised bargaining arrangements and strong unions have relatively lower gaps and extreme wage compression and more private-sector dispersion in decentralised structures ([Høgedahl et al., 2023](#); [Maczulskij and Pehkonen, 2011](#)). Therefore, analogous wage gaps could stem from very different institutional arrangements.

2. 4. THE CASE OF TÜRKİYE

The Turkish literature unfolds more slowly but shows similar trends. The public sector, which encompasses civil servants, contracted personnel and workers at state-owned enterprises is still a key employer. [Tansel \(2005\)](#) identifies a considerable public sector premium, especially for women, even if adjusted for education and experience. [San and Polat \(2012\)](#) report much higher wage dispersion in the private sector, implying a more rigid public pay structure. [Akarçay-Gürbüz and Polat \(2016\)](#) report an ongoing discrepancy from the mid-2000s and the early 2010s, with gender and occupational differences notably evident. Based on HLFS microdata for the sample area, [Aktuğ and his co-authors \(2021\)](#) demonstrate that lower educated public workers earn more than the equivalent private-sector workers and that skilled private-sector workers experience greater income volatility. Stable wages and insulation from market ups and downs lead to an easier career path in public employment. This represents a trade-off, on the one hand the profitability of the private sector is maximized whilst the cost of risk is increased, on the other hand the public sector is stable but with relatively smaller wage increases. At an institutional level, Turkish public wages are set through collective agreements, fiscal rules, and government edicts, but do not respond effectively to short run economic shocks. According to [OECD \(2023\)](#) figures, public employment represents 13-14% of all employment, lower than the 18.2% OECD average for the country yet still significant. Türkiye is like Chile, Japan, and Korea in size of the public sector; however, it retains Southern and Eastern European tendencies in terms of centralised bargaining and wage compression. From a methodological perspective, to distinguish between explained and unexplained components, most studies rely on Oaxaca–Blinder decomposition ([Christofides & Michael, 2013](#); [San & Polat, 2012](#)). Mean-based methods may mask distributional heterogeneity, nevertheless. Quantile regressions and unconditional quantile decompositions the influence-function method ([Firpo et al., 2009](#)) and counterfactual decompositions ([Chernozhukov et al., 2013](#)) - are more able to determine variation about wage distribution and may be in favour of Türkiye. Two gaps persist despite the growing number of studies. To begin with, the existing literature largely considers pre-2015 periods and average differences with little or no distributional evidence beyond 2015. Second, the connection between wage gaps and institutional and fiscal structures is weakly made explicit. The present research seeks to overcome both these voids by examining HLFS microdata in 2015 and 2022 and performing mean and distributional decomposition techniques together to distinguish composition from wage-structure effects to provide new and policy-relevant evidence for Türkiye.

3. DATA AND DESCRIPTIVE STATISTICS

Within this section, data, variables and sample construction are described, along with descriptive patterns that motivate the empirical analysis.

3.1. DATA AND VARIABLES

The data and variables analysed include microdata from the Turkish Household Labour Force Survey (HLFS) for the years 2015 and 2022. The HLFS, hosted by TurkStat, is a nationally representative instrument and is widely used for research in wage formation and sectoral wages (Tunali et al., 2021; Ilkkaracan, 2012; Değirmenci, 2023). For comparability purposes, the same sample limitations, definitions and wage-production procedure are carried out in both waves. This survey features demographic information (age, sex, marital status and education), region, occupation, firm size, employment status, the number of hours worked, and the wages they earn. The sample is limited to public or private sector 15-64 years old registered wage and salary employees who self-report positive net hourly wages and days worked. Observations in the bottom and top 1% of the wage distribution are excluded from this analysis. The final sample consists of 78,968 observations from 2015 and 118,460 observations in 2022. Hourly wages are derived by dividing monthly net earnings (in Turkish lira) by 4.33 (average weeks per month) and weekly working hours. Log hourly wages are applied in regressions to allow interpretation of hourly changes to be approximated as percentage changes to minimise the effects of over- and under-reporting of hourly wages. The clear sectoral differences can be seen in Table 1. Public employees earn a lot more (about 0.85, 0.62) than private earners, on average, log wage gaps in 2015 and 2022 are also much larger. They are also older, more senior, and more likely to have academic qualifications. White-collar work and administrative work are more common for public workers and found in Central and Eastern Anatolia, while private employment occurs in urban and industrial areas including İstanbul, the Aegean and East Marmara. The two sectors, cumulatively, attract structurally disparate workers and sorts of work. It's likely these structural disparities provide a significant explanation for the real wage differential observed, something addressed by the econometric framework.

Table 1. Descriptive statistics for public and private sectors

	2015		2022	
	Public Sector	Private Sector	Public Sector	Private Sector
<i>Variables</i>				
Hourly Wage (ln)	2.281	1.426	2.230	1.607
Gender	0.308	0.248	0.348	0.297
Age	39.594	34.663	39.777	36.45
Seniority	13.027	4.451	12.234	4.882
No Schooling	0.005	0.019	0.005	0.019
Primary	0.076	0.290	0.069	0.215
Middle School	0.059	0.205	0.062	0.188
High School	0.184	0.289	0.185	0.322
University	0.598	0.185	0.575	0.235
Graduate School	0.077	0.012	0.103	0.020
Married	0.812	0.680	0.781	0.656
<i>ISCO 08</i>				
White Collar	0.612	0.170	0.588	0.193
Service	0.256	0.312	0.260	0.303
Blue Collar	0.132	0.512	0.153	0.504

	2015		2022	
	Public Sector	Private Sector	Public Sector	Private Sector
<i>NUTS 2</i>				
Istanbul	0.046	0.168	0.040	0.126
West Marmara	0.072	0.084	0.061	0.074
Aegean	0.116	0.135	0.112	0.148
East Marmara	0.072	0.121	0.079	0.148
West Anatolia	0.144	0.131	0.110	0.107
Mediterranean	0.104	0.104	0.113	0.110
Central Anatolia	0.080	0.054	0.081	0.057
West Black Sea	0.104	0.063	0.102	0.070
East Black Sea	0.053	0.031	0.052	0.035
Northeast Anatolia	0.063	0.024	0.076	0.028
Mid-East Anatolia	0.070	0.033	0.081	0.037
Southeast Anatolia	0.076	0.051	0.092	0.058

Source: Authors' calculations based on Turkish HLFS, 2015 and 2022

Public-private wage differentials matter for public finance as well, because even narrow premia can lead to very large, enduring budgetary costs that extend to a sizeable labour force. According to OECD System of National Accounts indicators, the share of general government jobs in Türkiye was 12.4% of total jobs in 2015 (OECD average: 18.1%) and 13.5% in 2021 (OECD average: 18.6%), which means that Türkiye has a smaller public workforce than the OECD average (OECD, 2023). Although these aggregates are not directly comparable to the HLFS sample of the wage-employee subset, they nevertheless highlight the fiscal importance of pay policy: public-sector remuneration is inflexible so that changes in the public-private wage gap can impact the wage-bill system, the fiscal flexibility and the state's ability to keep the budgets disciplined across time. There are also limitations in comparing 2022, as both take place after the COVID-19 shock. The evidence of the distribution of the first pandemic wave suggests that it temporarily favoured workers in sheltered sectors, such as public administration and education, while wage drops were seen for low-paid workers in more exposed private sectors (Aina et al., 2023). This research compares 2015 and 2022 as opposed to the immediate pandemic period and reveals a lower public-private wage gap in 2022. This is consistent with crisis-induced benefits vanishing as wages return and the labour markets stabilise and it conforms to the decomposition results, indicating a reduced role for sector-specific returns as of 2022. Even so, the 2015-2022 comparison likely accounts for both structural changes and the post-pandemic recovery and reallocation effects.

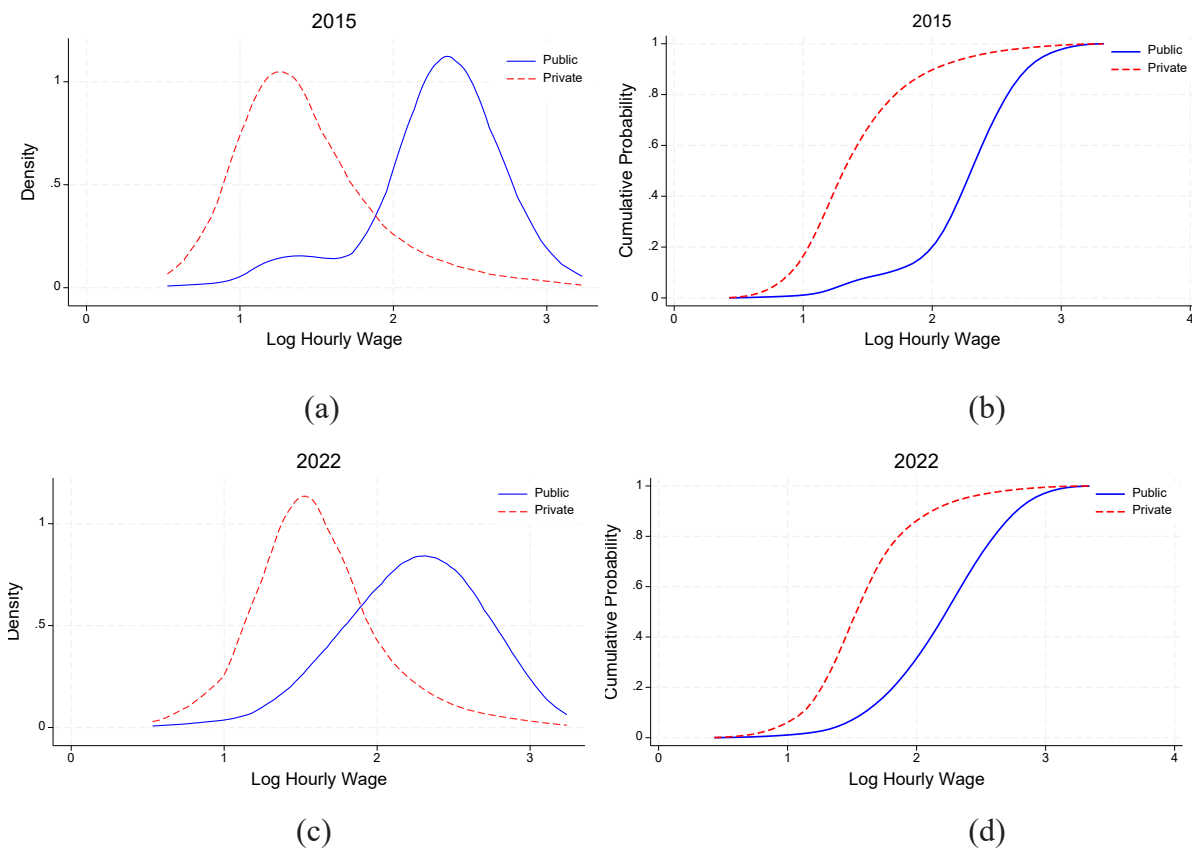
3. 2. DISTRIBUTIONAL PATTERNS OF UNCONDITIONAL PUBLIC - PRIVATE WAGE DIFFERENTIALS

This subsection analyses the distribution of wages, specifically in the public and private sectors, and their changes from 2015 to 2022. We report the kernel density estimates (KDEs) for 2015 in panel (a), the cumulative distribution functions (CDFs) for the same year in panel (b), the 2022 KDEs in panel (c), and the 2022 CDFs in panel (d), arranged in four panels in Figure 1. In both years, the KDE lies to the right of the private sector curve, that is, public employment raises wages along the distribution. However, the two curves are closer in 2022 - the distance between the two curves is smaller, indicating a decrease in the public-private wage premium over this time. The distribution of in-sector wages (public and private) faces a larger shape alteration as well; while the KDE in 2015 shows some consolidation, the KDE in 2022 is gradually spreading out, providing evidence of growing in-sector wage inequality. This increased spread probably represents alterations in public employment mix, or lopsided

wage hikes through the worker classes.

The private sector reveals an entirely different picture. The KDEs for private sector workers for all variables until this point (2015 and 2022) stay structurally similar, suggesting that wage dispersion in the private sector is much more stable over time. While there is some movement in the centre of distribution, the overall spread is not notably different. Such stability contrasts with the growing disparity seen in the public sector and implies that the private sector does not undergo an identical level of internal wage reform. The CDF results in panels (b) and (d) back these up. In both years, public-sector workers continue to earn more than private-sector workers at nearly every quantile, but the benefit is distinctly smaller in 2022. Collectively, Figure 1 demonstrates two significant developments: the wage gap between the sectors has narrowed, and wage inequality within the public sector has increased, while private-sector wage dispersion has remained comparatively stable.

Figure 1. Kernel Densities (a), (c) and Cumulative Distribution Functions (b), (d) by Sector, 2015 and 2022



Source: Authors' calculations based on Turkish HLFS, 2015 and 2022

4. METHODOLOGY

Econometric tools used in the analysis of differences between the wage rates of public- and private-sector workers in Türkiye can capture typical outcomes and variability over the wage distribution. The empirical approach follows a conventional OLS model to estimate the mean gap, providing a minimal benchmark. It then uses the Oaxaca-Blinder decomposition to decompose the mean difference into two components (explained differences in observable characteristics and unexplained, differences in the returns to those characteristics). Moving beyond mean comparisons, the unconditional quantile decomposition is used by [Chernozhukov et al. \(2013\)](#), which illustrates the range of variation across the distribution in the wage gap and its elements. Collectively, these techniques help differentiate between compositional variances

from sectoral pay-setting trends and demonstrate how both vary along the wage distribution. In the first step, the analysis estimates the conditional wage gap by regressing the logarithm of hourly earnings on demographic and job characteristics and a public-sector employment indicator. This pooled OLS specification assumes that returns to observed characteristics are consistent across sectors (education, experience, occupation, region) so any residual gap is captured by the sector indicator. The pooled coefficient reflects an average effect across sectors, which can obscure heterogeneity if returns are different. That is why OLS is a reference and complemented with decomposition approaches that enable sectorally targeted returns.

The Oaxaca–Blinder decomposition de-homogenizes the assumption of homogeneous returns in the wage equations by sector with a mean gap that breaks down into two quantities. Analysis to decompose the mixture considers differences in average characteristics between public and private workers, ranging from education to occupation to region and demographics. The wage structure (unexplained) element, though, is concerned with the relationship between these features and the pay, and it has been frequently referred to as the conditional advantage (or disadvantage) of public-sector employment. This approach helps isolate the role of sector-specific pay-setting since it allows returns to vary by sector.

Care must be taken in interpreting the wage structure part. This reflects differential returns to measured characteristics but does not correspond to a direct estimate of an institutional wage premium. If workers sort into sectors based on unobserved characteristics (such as ability, motivation, risk aversion, or access to entry channels) or if jobs differ in non-wage characteristics, the ‘unexplained’ component may capture partial unobserved heterogeneity between roles and compensating differentials as opposed to sectoral premiums. Hence, it is best understood as a residual variation in pay setting subject to observable differences.

Mean-based decompositions, however, can obscure significant distributional variability, particularly where public-sector wages are more compressed than private-sector wages. To capture such heterogeneity in the analysis, we integrate the unconditional quantile decomposition of Chernozhukov et al. (2013), which analyses the wage difference and components at diverse points in the wage distribution. Let Y denote log hourly wages, X the vector of covariates, $S \in \{P, R\}$ the sector indicator for public and private workers respectively. The CFM method uses distribution regression to compute conditional wage distribution:

$$F_{Y|X,S=s}(y|x) = P(Y \leq y | X = x, S = s) = \Lambda(x' \beta_s(y)) \quad (1)$$

where $\Lambda(\cdot)$ is a link function (logit) and $\beta_s(y)$ is estimated for each wage threshold y . The unconditional wage distribution in sector:

$$F_s(y) = \int F_{Y|X,S=s}(y|x) dF_{X|S=s}(x) \quad (2)$$

A counterfactual combining public returns and private characteristics is defined as:

$$F_{p|R}(y) = \int F_{Y|X,S=p}(y|x) dF_{X|S=R}(x) \quad (3)$$

Quantiles are obtained by inverting these distributions:

$$Q_s(q) = \inf\{y : F_s(y) \geq q\}, \quad Q_{p|R}(q) = \inf\{y : F_{p|R}(y) \geq q\} \quad (4)$$

The unconditional wage gap at quantile q is:

$$\Delta(q) = Q_p(q) - Q_R(q) \quad (5)$$

and the decomposition is as follows:

$$CE(q) = Q_{p|R}(q) - Q_R(q), \quad WSE(q) = Q_p(q) - Q_{p|R}(q) \quad (6)$$

where $CE(q)$ is the composition effect and $WSE(q)$ the wage structure effect.

These methods provide a robust framework for analysing wage differences between public- and private-sector workers. The OLS results establish the overall gap, the Oaxaca–Blinder decomposition identifies the roles of characteristics and returns, and the CFM quantile approach reveals how these relationships vary across the wage distribution. The section that follows presents the results of this empirical analysis.

5. RESULTS AND DISCUSSION

The study estimates the public–private wage gap not only at the mean but also at several points of the wage distribution for Türkiye in 2015 and 2022. Using counterfactual decomposition methods, it then breaks down these differences to see which factors drive the overall gap and how those drivers shift over time.

5.1. WAGE DIFFERENCES AT THE MEAN

Differences in wage between the public and private sectors are probably a product of differences in the characteristics of their workers and their job features. A common approach in the empirical literature is to combine observations across both sectors and approximate an OLS regression of log hourly wages incorporating a public sector indicator alongside observed covariates. Yet because this specification presumes equal returns to characteristics across the sectors, the only difference, in the public private, is due to the shift in the intercept it is an interesting initial benchmark for the wage differential. The model is estimated separately in 2015 and 2022 to examine the change over time. In agreement with the above descriptive results, the statistical analysis reveals that in both years public workers have a statistically significant wage advantage, but this gap is less in 2022, indicating a narrowing of the public private wage gap in Türkiye.

Table 2. OLS Pooled regressions with public sector dummy

	2015		2022	
	Estimate	SE	Estimate	SE
Public Sector	0.469***	0.004	0.349***	0.003
Gender	-0.090***	0.003	-0.072***	0.002
Married	0.075***	0.003	0.045***	0.003
Age	0.029***	0.001	0.027***	0.001
Age Squared/100	-0.036***	0.001	-0.031***	0.001
High School	0.155***	0.003	0.132***	0.003
Undergrad	0.401***	0.004	0.308***	0.003
Graduate	0.679***	0.008	0.520***	0.006
Seniority	0.012***	0.000	0.009***	0.000
White Collar	0.239***	0.004	0.197***	0.003
Service	-0.034***	0.003	-0.044***	0.003
Istanbul	0.224***	0.006	0.119***	0.005
Western Marmara	0.056***	0.007	0.081***	0.005
Aegean	0.064***	0.006	0.027***	0.005
Eastern Marmara	0.131***	0.006	0.100***	0.005
Western Anatolia	0.109***	0.006	0.060***	0.005

	2015		2022	
	Estimate	SE	Estimate	SE
Mediterranean	0.052***	0.006	0.012*	0.006
Central Anatolia	0.034***	0.007	0.016**	0.005
Western Black Sea	0.008	0.007	0.020***	0.006
Eastern Black Sea	-0.006	0.008	-0.007	0.006
Northeastern Anatolia	0.012	0.008	-0.004	0.006
Central Eastern Anatolia	0.030***	0.008	-0.017*	0.006
Constant	0.555***	0.017	0.833***	
Adjusted R-Squared	0.653		0.531	
F	6756.64		6103.03	
Observations	78,968		118,460	

Notes: *p<0.05, **p<0.01, ***p<0.001. Reference categories: Middle School or less educated for educational classifications, blue collar workers for occupational classifications, Southeast Anatolia for regional classifications.

Source: Authors' calculations based on Turkish HLFS, 2015 and 2022.

Table 2 estimates show clear differences in conditional wages of public and private sector workers in Türkiye in both 2015 and 2022. In every year, the coefficient for public sector is positive and statistically significant, but it decreases from log points 0.469 (2015) down to log points 0.349 (2022). This suggests that, after accounting for observable characteristics, the conditional wage gap reduces over time. Education is especially pronounced, those with university or graduate degrees earn substantially more, indicating robust returns to higher education in the Turkish labour market.

Regional trends can also matter. In more developed geographic areas like Istanbul and Eastern Marmara, employees earn higher wages than their less developed counterparts. These results fit together with the kernel density and cumulative distribution evidence, which shows higher wages for public sector workers spread across most of the distribution, and that the overall sector gap is smaller and the aggregate dispersion of wages for the population over time is greater. The analysis then relaxes the equal returns assumption by employing an Oaxaca Blinder counterfactual decomposition. This method divides the public private wage difference into two main components. The composition effect, or explained component, reflects differences in average observable characteristics between sectors. The wage structure effect, or unexplained component, indicates the divergence in expected returns to those characteristics. That unexplained component is generally interpreted as: wage advantage, if positive; or wage disadvantage, if negative, conditional on observables, associated with employment in the public sector. It can therefore pick out a wage structure effect (that would be ruled out under pooled estimation) as the method allows coefficients to vary across sectors. Table 3 summarizes the decomposition results.

Table 3. Decomposition analysis of average wage differences

	2015		2022	
	Estimation	SE	Estimation	SE
Public Mean Wage	2.324***	0.003	2.273***	0.002
Private Mean Wage	1.464***	0.002	1.633***	0.002
Total Gap	0.860***	0.004	0.639***	0.003
Composition effect	0.426***	0.009	0.509***	0.007
Gender	0.002	0.001	-0.003***	0.001
Education	0.229***	0.009	0.244***	0.006
Married	0.007***	0.002	0.012***	0.001
Age	0.093***	0.020	0.115***	0.011
Age Squared	-0.132***	0.018	-0.112***	0.009
Seniority	0.146***	0.009	0.085***	0.006
Occupation	0.043***	0.008	0.142***	0.006
Region	0.038***	0.003	0.026***	0.002
Wage Structure effect	0.434***	0.009	0.130***	0.008
Gender	0.011***	0.001	0.006***	0.001
Education	-0.002**	0.001	0.009***	0.001
Married	-0.010*	0.004	0.013***	0.003
Age	-0.185**	0.068	0.093	0.057
Age Squared	0.003	0.026	-0.087***	0.025
Seniority	-0.012***	0.003	-0.004**	0.001
Occupation	0.080***	0.017	-0.162***	0.013
Region	0.086***	0.004	0.062***	0.003
Constant	0.463***	0.049	0.200***	0.036

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors (SE) are obtained via bootstrap with 100 replications. Reference categories: Middle School or less educated for educational classifications, blue collar workers for occupational classifications, Southeast Anatolia for regional classifications.

Source: Authors' calculations based on Turkish HLFS, 2015 and 2022

The estimates in Table 3 are shown below for the conditional public private wage gap in Türkiye of 2015 and 2022. Overall, the total gap, in terms of the mean log wage differential between the public and private employees dependent on observables, is positive and statistically significant in both years. Its size falls from 0.86 log points (2015) to 0.64 log points (2022), showing that the conditional wage gap between the respective sectors has decreased. The bulk of the gap is due to variation in observable characteristics. Over the years, roughly half of the total differences in 2015 accounted by composition effect is explained by this effect, rising to nearly 80% in 2022 in comparison (approximately 50 percent in 2015).

Education, seniority and position in the region are top contributors, in line with the fact that public sector workers tend to be relatively more experienced and higher up the career ladder and have higher levels of education. The wage structure component, which captures differences in how the two sectors reward similar characteristics, is still positive and statistically significant, but it shrinks considerably, dropping from 0.43 log points in 2015 to just 0.13 log points

in 2022. This trend indicates an increasing convergence of sector specific returns to worker characteristic. The decomposition works with the kernel density and cumulative distributions evidence to explain to what extent of the sector gap is a function of characteristics vs. returns. They also reflect previous findings of the literature. **Akarçay-Gürbüz and Polat (2016)** have found that the public sector wage advantage expanded persistently from 2005 to 2013, by all estimates nearly reaching 0.80 log points at the end of the period. The 2015 estimate aligns with that trajectory, implying that the advantage remained up to the mid 2010s. Conversely, by 2022, the much smaller gap represents a significant shift, clearly reflecting changed labour market conditions, wage setting regime and faster adjustments to private sector wages.

5. 2. WAGE DIFFERENCES ACROSS WAGE DISTRIBUTION

A closer look at the wage distribution offers a far richer understanding of public–private differences than any mean-based comparison can provide. Instead of compressing everything into a single average gap, the unconditional quantile approach traces how wage disparities unfold at each point of the earnings scale. This matters a great deal in Türkiye. Public-sector pay tends to cluster within a narrower range, while wages in the private sector stretch out more broadly and show much sharper dispersion. Because of this contrast, examining low-, middle-, and high-wage workers separately reveals patterns that would otherwise remain hidden when the analysis focuses only on the mean.

Table 4. Decomposition of Public–Private Wage Differentials Across the Wage Distribution

	2015			2022		
	TE	CE	WSE	TE	CE	WSE
Q10	0.800***	0.443***	0.357***	0.481***	0.282***	0.200***
	0.008	0.006	0.008	0.005	0.005	0.006
%	100	55.4	44.6	100	58.6	41.4
Q25	0.953***	0.452***	0.501***	0.580***	0.324***	0.256***
	0.004	0.011	0.012	0.004	0.004	0.005
%	100	47.4	52.3	100	55.9	44.1
Q50	0.972***	0.341***	0.631***	0.690***	0.357***	0.333***
	0.003	0.005	0.006	0.003	0.004	0.004
%	100	35.1	64.9	100	51.7	48.3
Q75	0.899***	0.341***	0.573***	0.735***	0.350***	0.385***
	0.004	0.005	0.005	0.004	0.004	0.004
%	100	37.9	62.1	100	47.6	52.4
Q90	0.784***	0.368***	0.416***	0.669***	0.326***	0.343***
	0.006	0.006	0.006	0.005	0.004	0.005
%	100	46.9	53.1	100	48.7	51.3

Note: TE: Total Effect, CE: Composition Effect, WSE: Wage Structure Effect. *p<0.05, **p<0.01, ***p<0.001. The figures in parentheses correspond to bootstrapped standard errors, calculated using 100 replications.

Source: Authors' calculations based on Turkish HLFS, 2015 and 2022

In Table 4, the public private wage gap is examined as it ranges through levels of the Turkish wage distribution over time, together with how composition and wage structure shifts with time. This gap is wide throughout the distribution in 2015. It is roughly 0.80 log points at 10th percentile, reaches a maximum close to 0.95 at 25th percentile, and is large at median and upper quantiles. Composition effects account for approximately 35 to 55 per cent of the gap, the

biggest portions among low wage earners and the smallest around the median. This implies that the characteristics of the workers' and jobs' characteristics matter most around the bottom of the distribution, with the middle upward that pay setting within the sector plays a bigger role in effecting the difference at the top; and therefore, the sector is greater in the middle. More than 60% of the gap at median and upper quantiles in 2015 is explained by the wage structure component. This aligns with institutional characteristics of public pay such as standardized scales and limited sector-level wage flexibility that can compress pay scales when stacked against the private sector. This creates wage setting dynamics different on the mid-range and higher skilled public employees than they do in private employment. The picture is different by 2022. The whole gap is reduced at each quantile, with a reduction in mean value that falls to a minimum of 0.48 log points at the 10th percentile and approximately 0.74 log points at the 75th percentile.

During the same time, the composition effect becomes increasingly important, explaining close to 47 percent to 59% of the variations. This transformation confirms the description in the Table 1 with increased gap in observable differences between sectors, such as education, occupation, demographics, the distribution by region. The public sector is still highly concentrated in university and graduate holders; the private sector becomes slightly more educated but still employs a much larger proportion of blue collar. Demographic differences are also widening, with private sector workers being older and, on average, more experienced.

These differences enhance the explanatory power of observations and provide explanations for the larger composition contribution, consistent with evidence from multinational studies that differences in education and occupational mix between sectors enhance the impact of observed characteristics causing wage differences (Giordano et al., 2011; Christofides and Michael, 2013; Melly, 2005; Lucifora and Meurs, 2006, Hunady et al., 2025). At the same time the wage structure component loses such significant weight. At some points in 2015, it accounted for more than 60 percent of the gap, even though most quantiles have it at less than half of the explanation in 2022. This suggests a progressive convergence in the ways in which features get rewarded across sectors, presumably influenced by changes in the set-up of public wages, inflation or faster pace of private wage adjustment. These distributional results also support sectoral variation in wage creation institutions. Public pay is usually based on standardised scales and administrative adjustments, which produce more uniform wage changes. Private wages tend to adjust more strongly to firm level conditions and can fluctuate more unevenly among workers, in short periods of high macroeconomic action. Private wages in high inflation can also move faster or more unevenly by bargaining, job hopping, or firm policies that dampen the relative public advantage given a nominal increase in public wages. The lower wage structure effect in 2022 is therefore consistent with partial convergence in returns and the differences in the timing and flexibility of nominal wage adjustment across sectors.

The findings are in line with evidence from European economies within which public pay is influenced by formal scales as well as the bargaining arrangements. Research from Southern and Eastern Europe frequently captures public sector wage compression and significant distributional heterogeneity where institutional pay setting plays an important part in determining public private differentials (Lausev, 2014; Depalo et al., 2015). Türkiye's 2015 pattern, with wage structure reaching a maximum around the middle and upper quantiles, is characteristic of this sort of institutions. Although these sectors are compositionally different, the trend by 2022 to a larger composition contribution and a smaller wage structure role represents more similarity in sectoral returns. Public finance is similarly concerned about the narrowing premium. Public compensation is a substantial and relatively inflexible share of government expenditure, so a declining premium may reflect tighter wage bill constraints, shifts in pay setting priorities, or pressure to align public wages more closely with private sector benchmarks.

Similarly, the increasing role of composition also suggests that a greater proportion of the remaining gap is determined by who works in each sector, rather than how similar characteristics of the two groups or sectors are being compensated for. This implies that wage bill dynamics are becoming more likely to be related to the mix of education and occupational opportunities in public employment which have implications both for fiscal planning and capacity to recruit and retain skilled workers. Differences between the decomposition results and pooled OLS estimates finally indicate what is measured using each method. OLS provides a single conditional estimate with the same returns to characteristics applied across sectors, which drives heterogeneous patterns to a relatively uniform effect. Decomposition methods divide the gap into differences in characteristics and differences in sectoral returns, while quantile-based decompositions show the difference between the two components in the distribution. This allows for a richer understanding of public private wage variations than could be captured with a single OLS coefficient.

6. CONCLUSION

The present research attempts to analyse the differences in wage between public workers and private sector workers over a period between 2015 and 2022 in the Türkiye context while applying an empirical approach based on OLS estimates, the Oaxaca Blinder decompositions, and unconditional quantile method of Chernozhukov et al. (2013). In all specifications, there was greater earnings for the public employees over their comparable for the private sector, however, the degree of the variance in wages is smaller in 2022. This is consistent with shifting of the dynamics of wage setting between wage brackets during this period and private sector earnings rising at a somewhat higher rate. Results from the decomposition show that much of the overall gap results from variability in worker characteristics, with education, occupational structure, and regional placement as the top drivers by percentage. Differences in returns to these traits do matter but they have a diminishing impact over time.

Distributional findings lend to that insight as well. Wages in the public sector are still more compressed and less volatile at the same time in the other the wages in the private sector are more dispersed and greater sensitivity to high or low values. These signs illustrate of continued segmentation of the Turkish labour market. People with weaker labour market attributes seem to have a better advantage from working for the public sector as a result they enjoy more stability and compressed pay structure. However, the relatively narrow gap shows the signs of increasingly tight convergence across the sectors- which is possibly associated with fiscal limitations, institutional changes or changes to the wage setting of the private sector. For policymakers the challenge is competitiveness vs affordability, with the public sector paying well enough to keep people skilled but controlling your own spending in the long run.

On a public finance level, a smaller public sector wage premium may relieve wage bill pressures, but that might make it more difficult to recruit and retain people if public wages don't match up to changes to the private sector. Wage gaps will not guarantee fiscal sustainability by themselves as the wage bill is also contingent on the level of staffing, the structure (e.g. grade-level or overall salaries) and total compensation costs. Still, the declining premium corresponds to stricter limits on broad based public pay increases. The growing prominence of workforce composition also suggests that wage bill management will come to rely more on hiring structures and the skill mix of public employment rather than purely on pay rules. Policy over the short term should focus on consistent, timely wage adjustments during periods of higher inflation. In the medium to long term, the focus is not on wages but on the design of pay structures, the categorization of jobs, workforce planning, with more targeted adjustments for shortage occupations rather than uniform wage increases.

There are some limitations to consider, however. Because the study uses survey data rather than administrative records, reporting error can be observed, particularly for self-reported wages and hours. Also, the analysis is focused on monetary hourly wages only and therefore cannot capture differences in total compensation. Non wages and work benefits and job amenities, which are frequently material in the public sector, like pensions, paid time off, severance arrangements, health cover and secure employment can exacerbate the disparities even when wage gaps shrink. Variations in working environment and working hours may also affect sector selection and influence the interpretations of wage gaps. For these reasons, the estimates should be interpreted as wage differentials, not total compensation differentials. Future research could incorporate surveys with administrative data, or benefit information in studies measuring effects of adding non-wage elements to increase the public private gap. Lastly, this comparison is based on two points in time. A longer time series would enable deeper analysis of reforms, institutional changes and macroeconomic shocks and makes evident opportunities for future work.

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