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Public Sector Pay in NZ

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Disclaimer

Data access to Statistics NZ data was under Microdata Access Agreement MAA2015-10: 'Government Policy and the Labour Market' between Statistics New Zealand and Motu.These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) and Longitudinal Business Database (LBD) which are carefully managed by Stats NZ. For more information about the IDI and LBD please visit https://www.stats.govt.nz/integrated-data/
Access to the HLFS-IS and LEED data used in this study was provided by Stats NZ under conditions designed to give effect to the security and confidentiality provisions of the Data and Statistics Act 2022. the results presented in this study are the work of the author, not Stats NZ or individual data suppliers.
The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

Strategic Pay Ltd provided access to a confidentialised version of their remuneration and job evaluation data. The views expressed in the paper reflect the views of the authors and not necessarily those of Strategic Pay Ltd.

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Abstract

According to official statistics, average pay in the public sector is 25% higher than in the private sector in New Zealand. This paper examines the factors underlying public and private sector pay differences using several complementary analyses. First, we use Household Labour Force Survey (Income) data to decompose the raw hourly wage difference into components associated with observable differences in jobs and workers. Second, we use administrative data to identify (FTE monthly) pay differences associated with workers and the firms they work for. Third, we analyse FTE earnings changes associated with workers who switch between public and private sector jobs over time. We find consistent evidence from these analyses that the public sector pay premium is 5–8% after adjusting for observable job differences, differences associated with workers and firms, or associated with workers who switch sectors. Finally, we use proprietary job evaluation and remuneration data to control for content-size differences between public and private sector jobs. Compared to the raw average public sector premium in these data of about 6% in base salary and 3% in total remuneration, controlling for job size differences we find that private sector pay is higher than public sector pay for similarly sized jobs, particularly for remuneration other than base salary.

JEL codes

H50 National Government Expenditures and Related Policies - general

J31 Wage Level and Structure • Wage Differentials

J45 Public Sector Labor Markets

Keywords

Public Sector; Pay gap; Decomposition; Two-way fixed effects; Job evaluation

Summary haiku

Government workers
Would they earn more or earn less
in a private firm?

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1 Introduction

There is a perception that workers in the public sector are overpaid relative to workers in the private sector. For example, recent reports highlight a 25% pay gap between the public and private sectors (Edmunds, 2025; Public Service Commission, 2024).[1] Such a large pay premium in the public sector raises concerns about possible earnings distortions created across the labour market, as well as a high fiscal cost to the government. However, differences between public and private sector wages may reflect a variety of factors, including differences in the pay structure between the two sectors, differences in the characteristics of workers and jobs in the two sectors, and/or differences in the selection incentives for workers to work in either sector (Dustmann & van Soest, 1998).

In this paper we assess the existence and contributions of alternative factors to differences between public and private sector pay using a variety of approaches and data sources. First, we use survey data from the Household Labour Force Survey - Incomes (HLFS-IS) to control for the contributions of observed differences in workers and jobs to the public-private sector gap in workers' hourly earnings (wages). The HLFS collects information about workers' socio-economic characteristics at the time of the survey, but provides only point-in-time cross sectional information on any respondent.[2] This analysis uses a Blinder-Oaxaca (Blinder, 1973; Oaxaca, 1973) approach to decompose the raw wage gap into contributions associated with differences in observed characteristics of workers and jobs, and differences in the wage that can be earned with a given set of characteristics in the two sectors.

Second, we use administrative (linked employer-employee data, LEED) panel data that identifies workers and the employers that employ them to control for the contributions of time-invariant unobserved differences in worker and firm characteristics. The analysis of LEED data focuses on differences in workers' full-time equivalent (FTE) monthly earnings in the public versus private sectors. In contrast to the HLFS, the LEED data has rich longitudinal information on worker-firm employment relationships ("jobs"), but contains relatively little information of the sociodemographic characteristics of workers.

[1] Official statistics on the public sector pay premium is on sectoral average hourly earnings measures from the Quarterly Employment Survey (QES).

[2] Respondents remain in the HLFS for up to 8 quarters, so may appear in at most two Income Surveys, which are collected each June quarter. We treat each annual Income Survey as independent.

Third, we also use the LEED data to examine patterns of worker flows by sector and industry. In particular, we analyse worker flows from the private sector into the public sector and vice versa, and compare the changes in FTE monthly earnings associated with these flows. We stratify the analysis by industries that are similar across the public and private sectors to provide a more like-for-like comparison, however this is challenging given the distinct nature of work often carried out in the two sectors.

Finally, we use proprietary job evaluation data from Strategic Pay Ltd (SPL) that includes information on the content-based "size" of different jobs. The SPL data contains information disproportionately from larger employers, so is not representative of the overall labour market. Remuneration is measured as FTE annual pay and is available for base salary as well as for a total remuneration measure. Almost all jobs in the SPL data are allocated points based on matched detailed job-type codes, which provide a 'size' measure of a job. We use these data to present a preliminary analysis of public-private sector pay differences that, arguably, more accurately controls for differences in the nature of jobs. In addition, for a subsample of the SPL jobs, the points are broken down along 10 different dimensions ("factors").[3] This facilitates a decomposition of the public-private pay gap based on points differences along each dimension, and public-private differences in returns to points within each dimension.

These four analyses provide useful insights from complementary methods and data. Each has particular strengths and weaknesses for understanding the nature and magnitude of public-private sector pay differences. The HLFS-IS and LEED analyses provide remarkably consistent headline results for both the raw public-private sector pay gaps of 22-26% (in line with QES estimates), and adjusted gaps (adjusting for worker and job characteristics) of 5-8%. The SPL data show smaller raw gaps of 6% in base salary and 3% in total remuneration, and adjusted gaps (adjusting for job size) of 1% in base salary and –3% in total remuneration: the latter implying there is a private sector premium in total remuneration. For the subset of jobs for which detailed job evaluations are available, the adjusted gaps (–4% in base salary and –8% in total remuneration) imply that pay is higher in the private sector.

The remainder of the paper is organised as follows. In the next section we start with some background and a review of relevant literature on public versus private sector pay differences, together with a discussion of how we will identify alternative private and public sector groupings in our data analysis. As our analyses use three distinct data sources, we present and discuss each

[3] This is based on the SP10® job evaluation methodology. SP10® evaluations are available disproportionately for larger jobs.

of these analyses in turn. First, in section 4, we focus on the Blinder-Oaxaca decomposition analysis of public versus private sector hourly wage gaps using data from the HLFS-IS. Second, we present the analyses of differences in worker and firm characteristics and worker flows uses LEED data derived from administrative sources in Statistics New Zealand's Integrated Data Infrastructure (IDI). The FTE earnings gap analysis controlling for firm and worker characteristics is presented in section 5, and the worker flows analysis is presented in section 6. Third, the final analysis of differences between public and private sector jobs using proprietary job size and remuneration information from Strategic Pay Ltd is presented in section 7. The paper concludes with a summary discussion, including discussion of gaps for possible future research.

2 Background and literature review

In recent years, public service pay guidance from Te Kawa Mataaho (Public Service Commission) has highlighted the range of objectives relevant for public sector pay setting. Guidance in 2021 noted the role of public sector pay setting in responding to the impacts of COVID-19 (Public Service Commission, 2021). It emphasised equity objectives by encouraging greater pay increases for lower paid public sector workers, with pay restraint for higher earning workers. It also supported the role that public sector pay practices can have in closing gender and ethnic pay gaps. More recently, guidance has placed more emphasis on restraining fiscal costs, while maintaining elements of equity such as a continued focus on "remuneration of the lowest paid" public servants, and reducing gender and ethnic pay gaps, together with more explicit guidance on pay flexibility, and public sector performance and responsiveness (Public Service Commission, 2023, 2024).[4]

Figure 1 shows the trends in the public sector pay premium over the period from 1990 to 2025, as measured by real hourly earnings from the Quarterly Employment Survey (QES). The top panel shows pay levels in both the public and private sectors, and also the difference between them as a proportion of private sector pay. The pay gap rose steadily between 1995 and 2010 from around 20% to around 35% and has declined since 2010 to its current level of around 25%.[5] The lower

[4] According to PSC data, real average salaries increased more strongly between 2018 and 2023 for lower-paid occupations such as 'social, health and education workers' (10%), and declined for higher paid occupations such as policy analysts (–3.1%) and managers (–4.5%). The most pronounced changes were in 2020-2021. See Appendix Figure 1

[5] The Quarterly Employment Survey was redesigned in 2021, with series back-cast to September 2009, and increased coverage of public sector schools (Statistics New Zealand, 2021a, 2021b). It is not clear how much the changes in Figure 1 are affected by the redesign. As discussed below (section 4.2; Figure 2), data from the HLFS-IS series show a similar decline in the public-private gap over the last decade.

panel shows public and private sector pay and gaps separately for men and women. Until recently, the public-private pay gap was larger for men than for women but both pay gaps have fallen recently to around the same level of 25% to 30%. There was a decline in average real hourly earnings for public sector employees between 2021 and 2023, particularly for men.

In the remainder of this section, we provide some discussion of relevant literature on public versus private sector pay differences. We first review New Zealand specific literature, and then review some of the international research, particularly from Australia.

2.1 Previous New Zealand studies

Two studies by John Gibson (Gibson, 2007, 2009b) analyse the public-private pay gap in New Zealand using data from the International Social Survey Program-Work Orientations (ISSP-WO). Both studies use propensity score matching (PSM) approaches to match public sector workers to workers in the private sector with similar observable characteristics. The 2005 ISSP-WO survey collects information on both job and worker characteristics, while surveys in surrounding years collect only worker characteristics information. The ISSP-WO surveys asked respondents to report their gross (pre-tax) yearly income from all sources (using ten income brackets). Gibson (2007) used data from the 2005 survey to analyse the logarithm of workers' annual income (presumably measured as the mid-point of the income brackets), controlling for differences in worker and job characteristics. He finds that the public sector pay (annual income) premium ranges from a raw difference of 0.104 (11%), to 0.188 (21%) when PSM is used to adjust for personal demographic and location characteristics, and job attributes, with intermediate estimates when he also controls for 'job effects on worker' and/or worker attitudes to work.

Gibson (2009b) uses data from the 2003–2007 ISSP-WO survey waves, together with a similar survey conducted by the author in 2007, to assess the trend in the public-private gap over time. Compared to a raw public sector pay premium of 8.5% (0.082 log points) across the 2003–07 period, Gibson reports PSM-adjusted annual income premia that increase monotonically from 4.2% in 2003 to 22.4% in 2007. Aside from being able to control only for observed worker characteristics in this analysis, the results imply a huge increase in the public-private sector pay gap over this relatively short five-year period.

One issue with Gibson's analyses concerns the use of the annual income measure of pay, as public sector work is more predominantly full-time or full-year than private sector work, and these differences are not obviously controlled for. This implies that the total earnings differentials will be confounded by differences in hours or weeks worked, as well as hourly wage differentials. For example, the fraction of workers employed full-time in our HLFS-IS analysis sample is 86% in the

public sector compared to 82% in the private sector (see Table 2). Similarly, in our administrative data sample the average FTE of workers is about 80% in the public sector compared to 68% in the private sector, and 51-55% of public sector workers are classified as full-time full-year compared to 33% of private sector workers (Table 1). These differences between the sectors suggest, all else equal, the annual income pay premium will overstate the hourly wage premium by 15–20%.

2.2 International studies

Gibson (2009a) compares public-private pay gaps in Australia, Canada, the UK and the US using the same ISSP-WO data as used in Gibson (2007). The data for these countries includes information on union membership which, in the private sector, ranges from 9% in the US to 17-19% in other countries; and in the public sector, from 35% in the US to 70% in Canada. The analysis uses PSM methods, as in the studies referred to above, controlling for worker characteristics, job attributes and union membership. Compared to raw public sector annual income premia of 27% in Australia, 32% in Canada, 8% in the UK and 31% in the US, PSM-adjusted premia controlling for worker, job and union membership range from 19–25% in Australia, 8–31%in Canada, 6–19% in the UK, to 0–17% in the US.

There have been several Australian studies of public-private pay gaps over the past three decades. Using data from the ABS Training and Education Survey 1993, and focusing on weekly earnings of full-time wage and salary earners aged 15-64, Borland et al. (1998) decompose weekly earnings differences between the sectors, with a selection correction adjustment for sector of employment. Compared to a public sector weekly earnings premium of $80 (13%) for males and $100 (23%) for females, they conclude that the differentials are explained mostly by differences in the characteristics of workers in each sector rather than differences in the how much is paid for those characteristics in each sector. They assess the robustness of the results using several alternative decomposition methods, and the results appear to be more robust for men than for women.

Three more recent Australian studies have used panel data from the Household, Income and Labour Dynamics in Australia (HILDA) survey to analyse public-private pay gaps. Siminski (2013) focused on the log(hourly wage) differences for year-to-year job-changers over 2001-2008, and used a GMM quasi-difference approach to control for differential returns to observed and unobserved skills by sector.[6] The raw public sector premium for male job-changers was 0.14 (compared to a 0.25 premium for all male workers), and 0.23 for female job-changers (versus 0.29

[6] This approach identifies sectoral premiums by modelling the relationship between annual wage changes and changes in sector, allowing for sector-specific returns to both observed and unobserved characteristics.

for all female workers). Siminski's preferred (quasi-difference) estimate of the public-private pay gap was 0.040 for males (versus 0.037 based on OLS regression, 0.050 using a Blinder-Oaxaca decomposition, and 0.032 using worker fixed effects, FE); and 0.059 for females (versus 0.065 OLS, 0.053 Blinder-Oaxaca, and 0.040 FE). About two-thirds of the raw differences are associated with differences in worker characteristics (0.10 for males; 0.17 for females). Siminski also cites evidence of higher (lower) premia for lower (higher) wage earners, but finds no evidence that the public-premium varies with skill, suggesting that low (high) wage public sector workers may be positively (negatively) selected on unobserved skills.

Mahuteau et al. (2017) analyse public-private log(hourly wage) gaps controlling for worker fixed effects with HILDA panel data from 2001–2014. Compared to a raw 0.18 log-point (20%) public-private sector gap, the OLS-adjusted premium for public sector employees is 0.074 (0.098 for females vs 0.047 for males), and the fixed effect estimated wage premium is 0.051 (0.055 females vs 0.046 males). Additional quantile FE-regressions find larger positive wage premium effects on lower quantiles:[7] 0.069 at the 0.1 quantile vs 0.024 at the 0.9 quantile. They also find higher wage premia over 2008-14 compared with 2001-07 (e.g. FE-mean estimates of 0.055 vs 0.039).

Birch and Preston (2024) use HILDA data over 2001-2022 to analyse public-private log(hourly wage) gaps using OLS, FE and random effects (RE) regressions to control for differences in observed and unobserved worker characteristics. Compared to a raw gap of about 16% (15.8% over 2001-14, and 6.3% over 2015-22), the FE estimate of the gap is 0.049 (5.0%) over 2001-14, and 0.037 (3.8%) over 2015-22. (The OLS estimates are 0.071 and 0.084, and the RE estimates 0.062 and 0.059, respectively.) While the male and female FE gaps are similar over the first subperiod, the gap was larger for females (0.051) than males (0.014) over 2015-22. Birch and Preston also estimate FE quantile (0.25, 0.5, 0.75) regressions for the 2015-22 period: these show slightly declining gaps from lower to higher quantiles for all and female workers, and small and statistically insignificant gaps for males across the quantiles.

In other jurisdictions, Dustman and van Soest (1998) and Bonaccolto-Töpfer et al. (2022) each use panel data from the German Socio-Economic Panel (GSoEP) data to estimate the public-private sector wage gap in Germany. Dustman and van Soest (1998) analyse the sensitivity of the estimated gap to possible non-random selectivity between the sectors and the assumed

[7] The method identifies sectoral pay differences for workers with earnings at different quantiles of the conditional wage distribution. i.e. according to the size of their unexplained (residual) pay – not according to their wage level.

exogeneity of education, experience and hours worked. They conclude that controlling for sector selectivity is particularly important for estimating the wage gap and, while they reject the exogeneity assumptions on the other variables, these have smaller effects on the estimated gap.

Bonaccolto-Töpfer et al. (2022) use GSoEP data over a longer time period (1984–2017), using fixed effects to control for time constant unobserved worker characteristics. Using fixed effect quantile regressions to estimate the wage gap at different points across the distribution, and separately by gender, they find there are positive gaps for women (0.16 log points raw and 0.09 with controls on average), but small and statistically insignificant gaps for men, across the distribution. The latter finding is in contrast to other cited German results that find positive gaps for lower wage male workers. Gregory and Borland (1999) also report research by Disney et al. (1997) and Blackaby et al. (1996) for the UK that the public sector pay premium declines across the earnings distribution.

In summary, the literature consistently finds that although the raw pay gaps between the public and private sector workers are quite large, most of the gap can be accounted for by differences in the characteristics of workers and jobs between the sectors. Gregory and Borland (1999) summary of the literature is that the public sector wage premium is mainly associated with female workers, and central government employment. Finally, in a broader review of public versus private sector labour markets, Gregory and Borland (1999) also report that there is typically less cross-sectional variation in public sector wages compared with private sector wages. This may reflect lower variability in the characteristics of workers in the public versus private sectors, as well as differences in their pay structures, and in other institutional differences such as union coverage etc.

3 Identifying the public sector and private sectors

Statistically, the public and private sectors in New Zealand can be identified on the basis of two classifications: Business Type, and Institutional Sector. Appendix Table 1 provides a stylised description of the relationship between the two classifications.[8] Official statistics from the QES rely solely on the Institutional Sector coding – selecting the codes underlined and marked in bold in Appendix Table 1. We additionally use the Business Type to identify the 'core' public sector as the non-trading subset of central and local government. These are entities that are coded with

[8] The classification is stylised in the sense that the LBD data include some exceptions. For example, there is a small number of public sector entities that are coded with business type codes below 7 or above 9.

business types 8 (Central government non trading) or 10 (Local government non-trading), and with institutional sector codes 3111 (Central Government excluding Funded Social Security Schemes), 3211 (Regional Authorities) or 3291 (Other Local Authorities). We refer to the remainder of the public sector as 'public sector – other'. This includes entities with business type coded as 7 (Central government trading) or 9 (Local government trading), as well as enterprises with business type codes 1–6 or 11–20 if they are in one of the public sector institutional sectors highlighted in Appendix Table 1. We refer to all private enterprises with identified institutional sector and business type codes 1–6 or 11–20 as the 'private sector'; and the group of remaining enterprises in a residual 'other firms' category: this includes Households (institutional sector 5111), Rest of World (6111) and those with either institutional sector or business type missing.

Table 1 summarises key characteristics of the public and private sectors, based on linked employer employee data (LEED) available in Statistics New Zealand's Integrated Data Infrastructure (IDI) and Longitudinal Business Database (LBD), for the 2000 – 2024 period. The LEED information is obtained from income tax data provided by Inland Revenue to Statistics New Zealand and available in confidentialised form in the IDI. These data are provided by employers, documenting all payments with income tax deducted at source. We define a 'job' as a unique combination of an employee employed by employer. We use a version of these data that has been further transformed to identify wage and salary earners and to adjust (imperfectly) for part-time and part-month employment.[9] The resulting data are available as 'labour tables' in LEED, as documented by Fabling & Maré (2015).[10] For each employee, we identify a single main job each year as the job with the highest earnings over the year, and calculate the average earnings rate during the year based on months other than the initial or final month in a job. Earnings are adjusted by the CPI and expressed in constant 2025Q1 dollar values.

Sector of employment is identified from Statistics New Zealand's Business Demography data, and linked to jobs using a confidentialised employer identifier. Each enterprise is assigned to a single sector. Where an enterprise is associated with more than one sector over time, we classify it as 'Mixed Sector'. If the enterprise is always in the public sector, but changes between 'non-trading' and 'other', it is assigned to an 'Other public sector' category.

Table 1 shows that the 18.3% of employees work in public sector enterprises, with the bulk of those (about 80% of public sector workers, and 14.9% of all employees) in Central government

[9] Monthly FTE is less than 1 only if a worker has multiple jobs in a month or earns less than the prevailing full-time minimum wage in the month. Part-time workers earning more than the full-time minimum wage will be classified as full-time (FTE=1).

[10] We use LEED labour tables created from the IDI_Clean_202410 archive.

(non-trading) enterprises. The public sector share of full-time equivalent employees is slightly higher, at 20.7%, reflecting the fact that public sector employees have higher average full-time-equivalent employment (FTE) (80%) than private sector employees (68%). This difference in FTE is due mainly to differences in the number of months per year worked by public sector employees in their main job. Slightly over half of public sector employees are full-time and work in all 12 months (full-time, full-year), compared to about one-third of private sector employees.

3.1 Pay gaps and Industry mix

The final two columns of Table 1 document the average log(FTE monthly earnings) for each sector and the public-private sector pay gap. The average log(FTE real monthly earnings) is 8.87 for all public sector employees (geometric mean, exp(8.87)=$7,125), and 8.67 for private sector employees (geometric mean $5,845). The public-private pay gap (log-difference) is 0.19 (20.9%).[11] Within the public sector, pay is relatively lower for local government (non-trading) employees, with a pay gap of only 14% compared with private sector employees.

The raw public-private pay gap reported in Table 1 reflects differences in worker characteristics and in job characteristics between the sectors, in addition to sectoral differences in how workers and jobs are paid. Subsequent sections of this report document a range of analyses that try to isolate the sectoral pay premium by controlling for worker and job differences. Table 2 provides an initial view of sectoral differences related to industry mix. As public sector employment is highly concentrated in a small number of industries, some detailed industries are by definition entirely in the public sector (e.g. O751: Central government administration, O76: Defence, or O7711: Police Services). Conversely many detailed industries are entirely in the private sector.

The industries in Table 2 are ordered in descending order of public sector employment. The top five industries listed (subsets of ANZSIC06 industries O: Public Administration and Safety, P: Education and Training, and Q: Health care and social assistance) account for less than 20% of total employment but 85% of public sector employment, and only 2% of private sector employment. In each of these industries, public sector employment accounts for over 78% of employment. In some more detailed subsets of these industries, employment is entirely within the public sector, which makes within-industry comparisons of public and private sector pay impossible. Pay gaps within broader industries are likely to reflect inter-industry differences between dissimilar sub-industries.

[11] We will often follow common practice and report log-differences as percentage differences – e.g., interpreting a 0.19 log-difference as (approximately) 19%. The approximation is close for small values and becomes less accurate as the log-difference increases.

Furthermore, over 60 percent of total employment is in the 'Other industries' group shown in the final row of Table 2. The small (2.2%) public sector employment in these industries is mostly in public sector trading entities, and accounts for only 6.3% of all public sector employment; in contrast, 74% of private sector employment is in these industries.

The segmentation of public and private sector employment across industries means that a 'like-for-like' comparison of sectoral pay will be challenging and must rely on similarities in other dimensions of worker and job characteristics, such as education, occupation, and job size. Such analyses are presented in the following sections.

4 Worker and job characteristics (HLFS-IS)

In this section, we report a statistical decomposition of the public-private hourly wage gap using worker-level data from the Household Labour Force Survey (Income). This approach allows us to estimate the contributions of different worker and job differences to the overall public-private pay gap.

4.1 Data description

The Household Labour Force Survey (HLFS) is a quarterly survey of labour market activity for the New Zealand resident population aged 15 and over. The HLFS has sampled about 20,000 households quarterly since 1986, and has included an annual income supplement (HLFS-IS) in the June quarter since 1997.[12] We use data from 2009–2024, as there has been consistent occupation and industry coding available since 2009. HLFS-IS data include hourly earnings information from an average of around 23,000 employees each year. We analyse pay differences based on real actual hourly earnings of employees reporting wage and salary earnings, using information on their main job. Earnings are deflated to $2025q1. Imputed and proxy responses are included, but we drop the top and bottom 1 percent of observations based on hourly wages to avoid extreme values that appear to be related primarily to reporting errors.[13]

[12] The income data source is now referred to as HLFS (Income), though it has been known as the HLFS-Income Supplement (HLFS-IS) or NZ Income Survey (NZIS), with the changes associated with changes in questionnaire and survey design. We will refer to the various iterations of these data as HLFS-IS.

[13] Survey respondents may either report their hourly wage directly or, more likely, report their earnings and hours worked over some period (e.g. week). In the case of the latter, their average hourly wage is calculated as their reported actual earnings divided by actual hours worked. Reporting errors in either wages directly, or earnings or hours (e.g. associated with non-synchronised earnings and hours reporting periods) result in the calculated wage being measured with error, and include substantially high and low wage outliers.

Sector of employment is obtained by linking HLFS-IS respondents to monthly job records in the LEED data (as described above). We first link to any job or jobs that the respondent holds in the month in which they were interviewed, and retain information on the sector of employment. For single-job holders, sector of employment is classified as one of the following: Central government (non-trading), "CG-NT"; Central government (other), "CG-O"; Local government (non-trading), "LG-NT"; Local government (other), "LG-O"; or Private sector. For multiple job holders, the same sectoral classifications are used where the classification is unambiguous. More aggregated sector definitions are also used for all employees, enabling some multiple job holders or employees of entities that change sector to be retained where allocation is unambiguous (e.g., if an employee or entity is associated with both CG-NT and CG-O, they can unambiguously be treated as 'Central government', "CG"). For jobs where sector cannot be identified unambiguously, the observations are dropped, with the criterion applied independently for detailed and aggregated sector definitions. Sector information is missing for around 10% of wage and salary earners. After excluding the top and bottom 1% of wage earners, and workers that cannot be assigned unambiguously to a sector, our analytical sample includes 84% of all wage and salary earners in the HLFS-IS samples.

4.2 Descriptive Summary

Table 3 summarises key differences between public and private sector workers and jobs, based on survey-weighted HLFS-IS data. The public sector share of employment (22%) and the public sector pay gap (log-difference of 0.22 or 23 percent of private sector pay) are similar to the LEED statistics shown in Table 1. Figure 2 illustrates the change in the (log-difference) pay gap between 2009 and 2024. It shows a smaller pay gap but a similar pattern of decline compared with the gap from the QES (Figure 1): declining from around 25% in 2010-15 to around 20% in 2020-24.

Table 3 shows that public sector employees are more likely to be women, to live in Wellington, and are on average 4.8 years older than private sector employees. There are also substantial sectoral differences in highest qualification and in occupation. Fifty-eight percent of public sector employees have a degree qualification or higher – more than double the proportion (26%) of private sector employees. Similarly, 62% of public sector employees are in managerial or professional occupations, compared with 34% of private sector employees. Finally, differences in industry mix reflect the differences documented in Table 2, with public sector employment disproportionately concentrated in a small number of service industries. Overall, these differences in workers and jobs are expected to contribute to the pay gap between public and private sectors. The analysis in section 4.3 estimates the relative size of the contributions.

Figure 3 illustrates the relationship between occupation mix and public-private pay gaps. To do this we first calculate an average wage for each of 44 (ANZSCO 2-digit) occupations; we then calculate separate public sector and private sector means for each occupation. We plot these sectoral means (on the vertical axis) against the overall occupation mean on the horizontal axis in Figure 3(a); we also plot the public-private pay gap within each occupation, shown as the dashed line. The pay gap rises from about 10% associated with lower paid occupations to the largest pay gap of over 15% for mid-level occupations (with mean hourly earnings of around $37), and then falls to a low of about 10% for the highest paid occupations (with mean hourly earnings of $45 to $50. In addition to these 'within occupation' gaps, the overall gap also reflects the fact that private sector jobs are generally in lower paying occupations. This difference is shown in Figure 3(b), which displays the density of public and private sector jobs. The modal private sector job is in an occupation with average wage of around $30, whereas the modal public sector job is in a higher-paying occupation ($37 average).

4.3 Kernel densities

Although the overall average pay gap is a useful summary measure of pay differences, it does not capture differences in the shapes of public and private sector pay distributions. Figure 4 shows kernel density estimates of the distributions of public sector and private sector pay, combining information from the HLFS-IS for 2009 to 2024. Wages are measured in logs and normalised relative to the overall median wage in each year. There is a pronounced low-wage peak in the private sector wage distribution around 30% below the median, at or around the level of the Minimum Wage (Hyslop et al., 2025; Maré & Hyslop, 2021). In contrast, the modal wage in the public sector is around 30% above the overall median wage. Panel (b) of Figure 4 show the public and private sector wage densities separately for men and women. The low-wage peak in the private sector density is more pronounced for women. For both public and private sectors, the density of men's wages is to the right of the density for women, reflecting a gender pay gap.

Figure 5 shows the changes over time in the sector-specific wage distributions. For the public sector (panel (a)), there has been a compression of the wage distribution, with a smaller proportion of workers at lower (30% below median) and higher (30% above median) wages. This pattern is consistent with public sector pay restraint at higher pay levels, although the reduction in density above the median largely occurred between 2009-13 and 2014-18, prior to Public Service Commission pay guidance in 2021 (Public Service Commission, 2021). The reduction in low-pay density is due largely to Minimum Wage increases. The impact of the Minimum Wage is more clearly evident for the private sector (panel (b)). The rightward shift in the lower peak reflects

Minimum Wage changes, with increased density between the Minimum Wage and the median reflecting wage compression for below-median workers. For the private sector, there has been almost no change in the (median-adjusted) wage distribution above the median wage.

Panel (c) of Figure 5 shows the density changes between 2009-13 and 2019-24. The reduction in density below the current Minimum Wage is clearly evident. In both the public and private sectors, the density increased for mid-level wages (from 30% below the median to 30% above the median). The figure also shows the modest reduction in the public sector wage density for workers earning more than 50% above the median, a reduction that is not evident in the private sector.

4.4 Method: Blinder- Oaxaca decomposition

The log-difference between public sector and private sector pay can be statistically decomposed into contributions associated with differences in the average observed worker and job characteristics in the two sectors ("composition effect"), differences in how the average set of worker and job characteristics are remunerated in the two sectors ("returns effect"), and an "interaction effect" between differences in the characteristics and differences in how they are remunerated across the sectors. The decomposition follows the general approach developed by Oaxaca (1973) and Blinder (1973).

The first step is to estimate the relationship between (the log of) wages and observed characteristics of workers and their jobs. Equation (1) represents a linear relationship, which can be estimated using linear regression:

$$\ln w_i^j = X_i \beta^j + e_i^j \tag{1}$$

where the superscript-*j* indicates that the relationship can be estimated separately by sector (*j*=pu for public sector or *j*=pr for private sector) or for all workers (*j*=*), $\ln w_i^j$ is the log of the real hourly wage for worker-*i* in sector-*j*, X_i is a vector of measured worker and job characteristics (and includes an intercept term), and e_i^j is the associated residual. Each sector regression will identify separate coefficients (β^j).

There are several ways of combining the estimates to decompose the overall wage gap. We adapt the approach of Neumark (1988), expressed by equation (2) below:

$$\begin{aligned}\overline{\ln w^{pu}} - \overline{\ln w^{pr}} = \underbrace{(\bar{X}^{pu} - \bar{X}^{pr})\beta^*}_{Composition} + \underbrace{\bar{X}(\beta^{pu} - \beta^{pr})}_{Returns} \\ + \underbrace{(\bar{X}^{pu} - \bar{X})(\beta^{pu} - \beta^*) - (\bar{X}^{pr} - \bar{X})(\beta^{pr} - \beta^*)}_{Interaction}.\end{aligned} \tag{2}$$

Equation (2) shows the formula for separating the (mean difference) wage gap into the three components described above.[14]

The interpretation of the Composition effect is fairly intuitive. We calculate this effect associated with the different average characteristics across sectors by valuing them based on the returns estimated from a pooled regression (i.e. coefficients β^*). For instance, public sector workers have higher mean levels of education ($\bar{X}_{ed}^{pu} > \bar{X}_{ed}^{pr}$). The contribution of this to the wage gap is the difference in education $\left(\bar{X}_{ed}^{pu} - \bar{X}_{ed}^{pr}\right)$ multiplied by the (average) effect that education has on wages in the pooled regression (β_{ed}^*), giving $\left(\left(\bar{X}_{ed}^{pu} - \bar{X}_{ed}^{pr}\right)\beta_{ed}^*\right)$.

The Returns effect captures the difference in wages associated with different returns to skill characteristics in the two sectors. We calculate this effect as the average vector of characteristics ($\bar{X}$) multiplied by the difference in returns in the two sectors ($\beta^{pu} - \beta^{pr}$). If there is higher than average return to education for public sector workers $\left(\beta_{ed}^{pu} > \beta_{ed}^{pr}\right)$, this will contribute to a higher wage in the public sector for a worker with the average level of education $\left(\bar{X}_{ed}\left(\beta_{ed}^{pu} - \beta_{ed}^{pr}\right)\right)$.

If workers were randomly allocated across the public and private sectors, in the sense that the difference in characteristics is unrelated to the difference in returns, then the Composition and Returns effects would fully explain the average wage difference between the sectors. However, this is unlikely to be the case – e.g. if some characteristic is particularly well remunerated in one sector, then workers with that characteristic may be concentrated in that sector. The third, "Interaction effect", term captures these effects, by measuring how differences in average characteristics of workers in the two sectors 'interact' (or correlate) with the differences in the returns to those characteristics between the sectors. For example, if education returns are higher in a high-education sector, the Returns effect (evaluated at the average level of education) will understate the contribution of high education to pay. The interaction effect would be positive to capture the additional effect of having higher returns to higher than average education.

The contributions to the wage gap can be summarised for subsets of the variables that are included in the regression equations. The *X* variables included in our analysis are grouped under the headings of *individual factors* (gender; quadratic in age; 11 distinct ethnicity groups); *migrant* (indicator for non-NZ-born); *education* (4 categories as in Table 3); *location* (4 categories as in Table 3 plus 'minor urban' and 'rural'); *household factors* (household size, dependent children indicator, sole parent indicator, quadratic in equivalised household income decile); *job factors*

[14] The decomposition is estimated in Stata® using the user-written *Oaxaca* package (Jann, 2008).

(mean log(wage) within 3-digit ANZSCO occupation, part-time indicator); and *industry* (18 1-digit ANZSIC codes – A&B combined); and *time* (year-specific intercepts).[15]

4.5 Decomposition results

The results of the wage gap decomposition are presented in Table 4. The first column is based on a sample comparing all public sector employees and private sector employees. The public sector mean ln(wage) is 3.69 (geometric mean of $40.10) compared with a private sector mean of 3.47 (geometric mean of $32.15), giving a raw wage gap log-difference of 0.22. The second block of the table summarises the contributions from the decomposition of this raw average public-private wage gap. This decomposition implies that about 80% of this raw wage gap is due to differences in the average characteristics of workers and jobs between the sectors (composition effect, 0.18). Differences in the returns to average characteristics in the two sectors contribute around a quarter of the gap (returns effect, 0.06), with an offsetting small and negative effect of interactions between differences in characteristics and returns between the sectors (–0.01).

The third block in Table 4 documents which sets of variables make the greatest contributions to the composition effect. Not all sets of variables are shown although all are included in the underlying analysis. As suggested by the stark differences in characteristics shown in Table 3, the largest contributions to the composition effect are from job factors (mainly occupation, 0.09) and from education (0.05).

The 0.06 returns effect contribution to the public-private sector pay gap implies that, controlling for differences in worker and job characteristics, an average worker would earn 6% more in the public sector than in the private sector. Of course, including a more detailed set of covariates, such as educational field of study, occupational experience, or job size, or the presence of unobserved worker characteristics may account for some of this returns effect. However, instead of saturating the regression model with additional covariates, in subsequent sections (5, 6, and 7) we obtain alternative estimates based on different methodological and empirical approaches.

The fourth block in Table 4 similarly documents the contributions to the combined returns effect. However, in contrast to the composition effect contributions, the returns contributions are difficult to interpret. This is due to offsetting 'slope' and 'intercept' effects which can appear quite large when the average characteristics are relatively large (i.e. far from zero). For example, the

[15] The equivalised household income variable measures the contribution to equivalised household income from household members other than the individual themselves. Equivalisation using $1/\sqrt{N}$, where N is household size. We include the mean occupation log(wage) as a parsimonious alternative to a full set of occupation indicators.

contributions of the job and individual factors appear quite large, but are offset by a large negative intercept contribution. Despite the interpretation difficulty, the contributions provide some sense of the relative importance of the various factors.

The remaining columns of Table 4 repeat the analysis reported in the first column for different public subsectors. In each case, estimation uses all private sector employees (so the private sector mean wage is identical) but a different subset of public sector employees. Given that public sector employment is numerically dominated by central government non-trading (CG-NT) employment, it is not surprising that the estimates for public-NT, CG and CG-NT (columns 1, 2, 3, 5) closely resemble the 'All public' estimates in the first column.

Only the results for local government sector employees (LG and LG-NT, columns 4 and 6) are notably different from column 1. As shown in Table 1, local government public sector average wages are relatively low, resulting in a slightly lower raw wage gap (0.18 and 0.21) compared with 0.22 for the public sector as a whole. These smaller gaps are associated with lower composition effects (especially for education), as well as statistically insignificant returns contributions and interaction effects. Local government jobs and workers are slightly more similar to those in the private sector than are central government jobs and workers. Conditional on the composition effects associated with the covariates included in our analysis, there is no local government wage gap with the private sector.

We next consider decompositions of the 'All Public' average wage gaps for subsets of industry, occupation, and gender, as well as for three sub-periods. The occupation and industry results are presented in Table 5 and the gender and sub-period results in Table 6. Compared with the overall gap of 0.22, there are relatively small – but still positive – public sector wage gaps within health occupations (0.12 for ANZSCO 25) and the Pre-school and school education (ANZSIC P80) industry (0.14), and relatively large gaps within the Public Order, Safety and Regulatory Services (ANZSIC O77) industry (0.32) and within Community and Personal Services (ANZSCO 4) occupations (0.26). It is worth reiterating however that public sector jobs may be quite different from private sector jobs within broad industries or occupations. For instance, the relatively large estimated premium within the Public Order, Safety and Regulatory Services industry will reflect pay differences between dissimilar public sector and private sector sub-industries (eg: Police compared with Investigation and security services).

In Table 6, the decomposition results are very similar for both men and women. Consistent with Figure 5, the sub-period pattern confirms the modest declines in the raw public sector pay

gap over time (from 0.25 in 2009-13 to 0.19 in 2019-24). These declines were due mainly to declining contributions from composition effects.

In summary, this decomposition analysis shows that most (around 80% on average) of the observed raw average public-private wage gap can be accounted for by differences in observed characteristics of workers and jobs in the two sectors. Despite these differences, the returns effects imply there remains an apparent wage gap of about 5% between workers in the public versus private sector.

5 Sector and worker fixed effects (LEED)

In this section, we explore the public-private pay gap using a different dataset, method, and measure of earnings. The dataset used for the analysis in this section is the same as that described in section 3, derived from LEED data. The LEED data has the advantage that it is longitudinal, with each worker potentially appearing in multiple years, but has less information on worker characteristics than is available in the HLFS-IS data. We link worker age and gender from the IDI 'Personal Details' table to the job data in the LEED tables to allow us to control for gender- and age-related variation in wage changes.

The base LEED pay data is monthly earnings in a job (i.e. an employer-employee combination). We use the LEED tables to construct a monthly FTE earnings measure as the 'wage' for this analysis. This is used to estimate the Public-Private pay gap based on the earnings differences observed when a worker is employed in different sectors. By focusing on earnings changes for individual workers, we are able to 'net out' the effect of any unobserved, time-invariant worker characteristics. For instance, assuming individuals do not change the level of their highest qualification over the period, the average effect of their qualifications will be present in both their public and private sector jobs, so that the change in earnings does not depend on their qualifications but will reflect different returns to their qualifications in the two sectors. In this way, the average effects of characteristics are controlled for even though they may be unobserved (or unmeasured).

5.1 Changes over time

Figure 6 shows the changes since 2000 in public and private sector pay and the pay gap, based on LEED data. The graph is analogous to Figure 1 (using QES data) and Figure 2 (using HLFS-IS data), and shows similar patterns. LEED data show the public-private pay gap rising to 23% in 2010 before declining to an average of around 18% after 2020. The lower panel of Figure 6 summarises

patterns for men and women separately. The public sector pay gap was smaller for men than for women prior to 2008, but sex-specific gaps were then similar from 2010–2020, before a more pronounced decline in the male gap occurred since 2021.

5.2 Method: Two-way fixed effects

The empirical approach taken in this section to estimating the public-private pay gap is again based on linear regression, with the log of earnings as the dependent variable:

$$\ln w_{it} = \gamma_j + \tau_t + [quartic\ in\ age_{it};\ \beta_s] + \alpha_i + e_{it}. \quad (3)$$

The main coefficients of interest are the sector effects (γ_j). Equation (3) also includes year-specific time effects (τ_t) to control for aggregate wage variation over time, a sex-specific age-earnings profile to control for age-related earnings growth, and an individual worker fixed effect (α_i) that captures their time-invariant wage premium. Consistent with classifications documented in Table 1, each entity is classified into one of eight sectoral groups (j).[16] We include an intercept and set the sector effect for the private sector to zero so that the other sector effects represent public-private pay gaps. Sex-specific age-earnings profiles are included as quartic functions of age, with coefficients β_s. The worker fixed effects (α_i) allow for a separate intercept for each worker and their inclusion is analogous to measuring all variables relative to each worker's average over time.[17]

5.3 Findings

Table 7 summarises the estimated sector effects in equation (3) relative to the private sector. The first column reports estimates from a simple regression that omits the time, age, and worker covariates. The reported coefficients are the same as the raw public-private pay gap measures documented in Table 1. Subsequent columns progressively add the other covariates to the regression. We will focus on the estimated CG-NT premium in the first row: starting with the raw gap of 0.198, we can see the effect of adding the other covariates across the columns. Adding time effects (column 2), and additionally age-earnings profiles (column 3) have relatively minor effects

[16] These groups are as described in section 3: CG_NT; CG-O; LG_NT; LG_O; other public sector that cannot be uniquely assigned to one of the previous categories; private sector; firms that appear as both public and private in different years; and a residual category of 'other firms', which includes those in the Households and Rest of World institutional sectors, and firms with missing institutional sector or business type.

[17] Because of a well-known collinearity problem between a worker's cohort (i.e. α_i), and their age and time (year) in which they are observed (Kline, 2024; McKenzie, 2006), identification of the parameters in equation (3) requires further restrictions. We resolve this issue by constraining each age-earnings profile to be flat at age 48. Wage growth for both men and women is close to zero at age 48, so this constraint is not severe. We implement the constraint by measuring age as (age-48) and dropping the linear age term from the sex-specific age quartic.

on the estimated pay gap – increasing it from 0.20 to 0.22. (In fact, only in the LG-O sector is there a notable drop of estimated premium when age-earnings profiles are included – dropping from 0.18 to 0.10.)

Controlling for worker fixed effects (column 4) has a more substantial impact. When the pay gap estimate is identified from wage differences observed for workers who are employed over time in both public and private sectors, the estimated gap is much smaller. When comparing the CG-NT and the private sectors, the gap is more than halved, to 0.08. A similar change is evident for all the other sectors relative to the private sector, with declines of between 55% and 73% of the raw gap.

As was the case in the previous section, controlling for worker characteristics accounts for a majority (about 60%) of the raw public-private pay gap. In section 4, we were additionally able to include some controls for job differences, where occupational differences were shown to account for some of the observed pay gap. In this section, we are not able to control for occupational differences between sectors but have instead used the longitudinal data to control for time invariant worker-specific earnings differences.

The estimates in Table 7 are average pay gaps for each sector. To further investigate how the sizes of these gaps vary across industries, we extend the regression in equation (3) by interacting sector (*j*) and industry (*k*) to get industry-specific estimates of the public-private pay gap (γ_{jk}). These estimates are reported in Table 8, for 6 broad industry groupings that cover all firms. All estimates are from a single regression that also includes worker fixed effects, as in the final column of Table 7. The CG-NT pay gap is largest for the 'O77: public order, safety and regulatory services' (0.172) and 'Q84: hospitals' (0.126) industries – echoing the industry-specific estimates from the HLFS-IS findings in Table 5, which provided pay gap estimates covering the entire public sector.

6 Worker flows (LEED)

The analysis in this section documents some of the sources of variation that were contributing to the worker fixed-effects estimates reported in the previous section. Specifically, as noted above, the inclusion of worker fixed effects in equation (3) means that workers who do not change sectors do not affect the estimates of the public sector premium. The estimates are identified solely from workers who change jobs between sectors. In this section, we focus on the variation that is identifying the 0.081 estimate in the final column of Table 7, for the pay gap between the private sector and the CG-NT part of the public sector.

The motivation for this analysis is that if the decision to change sectors is random across workers then, abstracting from age and year effects, equation (3) implies that the FTE earnings change will, on average, consist of just the change in the sector fixed effect premiums associated with moving from one sector to another – e.g. the expected wage change associated with moving from the private to the public sector would be $(\gamma_{pu} - \gamma_{pr})$.[18] We focus on year-to-year changes in earnings, so the estimates in this section capture only the initial wage change in the year of transition. In contrast, the estimates in the previous section also capture the average effects of differential within-sector wage growth over time.

Given our focus on the public-private pay gap, we restrict attention to workers who are *ever* employed in the public sector between 2000 and 2024. This restriction excludes workers who either remain with a single non-public sector employer or only have job transitions between non-public sector firms. We also simplify the presentation of transitions by forming a 3-way classification of sectors: private sector, CG-NT and all other public subsectors combined.

6.1 Findings

Table 9 summarises the patterns of annual job changes that are observed in the annual LEED data, from March years 2001 through to 2024, together with the associated median earnings change over the following year (median change in log(FTE monthly earnings in main job)). The table also includes a summary of the average age of workers making each transition.

Each row relates to the sector that a worker is employed in during a year. The first block of the table summarises sectoral transition rates for each row, with the first column showing the relative size of each group. Public sector (CG-NT) workers account for 45% of the sample, which is higher than the employment shares shown in Table 1 due to the exclusion of workers who are never employed in the public sector. The remaining columns show the proportion of workers who are in each destination state in the following year, with the sum of transition proportions across each row adding to 100%. The four boxed cells contain the transitions of workers who move between public and private sectors, which are the focus of our analysis in this section. Such sector switches on average account for 7% of included private sector workers and 4% of public sector workers each year.

The second block of Table 9 shows the wage gains associated with each pattern of transitions. As discussed above, if the observed transitions represent essentially random movements of

[18] In comparison, the model used for the HLFS analysis (equation (1)), implies that the expected wage change associated with moving from the private to the public sector would be $E\left(\ln w_i^{pu} - \ln w_i^{pr}\right) = X_i(\beta^{pu} - \beta^{pr})$.

workers, then the expected wage gain would be the difference in sectoral wage premia – i.e. +/- 0.081[19] for transitions between the private and CG-NT sectors. The observed average wage changes clearly reject that simple hypothesis: i.e., workers who move from the private to the public (CG-NT) sector experience an annual wage increase of 9.6% on average, while workers moving from the public (CG-NT) to the private sector experience an average wage increase of 2.4%. There are various possible interpretations that could rationalise these differences that may reflect either the selectivity of which workers change sectors, or the nature of wage changes associated with such moves.

One simple interpretation is that wage changes following transitions include the change in sector premium plus a sector-specific transition premium. That is, a transition from the private sector into the CG-NT sector would include the 8.1% sectoral premium gain plus a 1.5% transition premium for moving into the public sector, while a transition in the opposite direction would include the -8.1% sectoral premium loss plus a 10.5% transition premium for moving into the private sector. This calculation is summarised as A in the table below.

	Sector premium	Job-change premium	Wage change
A: Based on sector premium of 8.1% from section 5.3			
Private to Public	8.1%	1.5%	9.6%
Public to Private	–8.1%	10.5%	2.4%
B: Assuming common job-change premium			
B: Private to Public	3.6%	6%	9.6%
Public to Private	-3.6%	6%	2.4%

The observed pattern in Table 9 is also consistent with a second interpretation (shown as B in the above table), that there is a 3.6% public sector (CG-NT) premium among movers that is gained when moving to the public sector and lost when moving to the private sector, plus an average wage change of 6% associated with job change in either direction.[20] The estimate of a 3.6% pay gap is considerably smaller than the worker-fixed-effect estimate of 8.1% in the final column of Table 7.

This difference suggests that there are more interesting dynamics in play that would be worth investigating in future research, but which are beyond the scope of the current analysis. Key issues to consider include (a) the selectivity of who moves; and (b) patterns of job tenure. For example, assuming workers are less likely to move to a new job that pays less, voluntary job changes will disproportionately be associated with pay increases. The relative size of wage changes for inter-

[19] This is the estimated sectoral pay gap that appears in the final column of Table 7.

[20] The implied public-private premium is calculated as $\big((d\ln w|pub \Rightarrow priv) - (d\ln w|priv \Rightarrow pub)\big)/2$.

sectoral moves could reflect different selectivity patterns. Patterns of tenure-related wage increases (the extent to which workers get paid more the longer they stay in a job) may differ between sectors. Focusing on changes in the year of transition (as is done in Table 9) may not fully capture such differences. The fixed effects model in Table 7 would more strongly reflect tenure effects because it uses information on all years of employment for workers who change sectors.

One form of selectivity that can be examined in the current data is selectivity by age. The final panel of Table 9 shows that the workers who move from private sector to public sector are on average younger than workers moving in the opposite direction (33.4 versus 36.7 years). Earnings growth is generally stronger for younger workers, so this age difference may contribute to the 3.6% pay gap estimate. However, workers who change jobs within the private sector are even younger on average (32.8) but experience smaller pay increases (3.5%), suggesting that the bias from age selectivity alone is not great.[21]

Earnings changes analogous to those in panel (b) of Table 9 are presented in Table 10 for four sub-periods. The differences between earnings changes for private-public and public-private flows imply public (CG-NT) - private pay gaps (using approach B) of 3.1% in 2000-2008, 3.0% in 2009-2013, 3.7% in 2014-2018 and 4.6% in 2019-23.

We next consider transition patterns between specific sectoral industries. As noted above, public sector employment is highly concentrated in a relatively small number of industries, some of which have no private sector entities. This limits the range of industry-specific sectoral transitions that can be analysed. Table 11 illustrates the scope for using the analysis of worker flow transitions to understand public-private pay gaps within industries. We restrict attention to transitions between four specific industry groupings (O: Public administration and safety; P80: pre-school and school education; P81/2: Other education; Q: Health; and all other industries combined. The boxed cells in Table 11 highlight intersectoral transitions within the education industries. The percentages in the first column show the proportion of total employment in each of the industry by sector groups. For P80 (pre-school and school education), private sector employment accounts for only 1.3% of the total transition-sample employment, and public sector employment accounts for 14.1% of this employment sample. Given these relative sizes, it is not surprising that the reported private to public transition rate (7%) is considerably larger than the

[21] We suspect the private-to-public sector patterns may also reflect start-of-career patterns that occur over the life cycle. For example, young workers who work part-time in non-career jobs in the private sector while they are students, before moving into the public sector after they graduate.

public to private rate (1%). As already noted, selectivity of who changes job and sector may affect the interpretation of wage changes experienced by those who make these transitions.

Table 12 reports the wage changes associated with the transitions shown in Table 11. Within the Pre-school and School industry (ANZSIC P80), workers who move from the private to the public sector experience earnings growth of 6.9%, whereas workers moving in the opposite direction gain only 1.9%. Based on the model-B above, this suggests a within-industry public sector premium of 2.5% ((6.9-1.9)/2). Comparable estimates can be derived for the other industries: P: other education (3.0%); O: Public Administration and Safety (14.0%); and Q: Health (11.8%). Although these estimates shouldn't be relied on as reliable indicators of public-private pay gaps, they do provide insights into some of the sources of variation that contribute to the worker fixed effects estimates in Table 7.

7 Job size differences (SPL)

In this section, we examine whether pay differences between public and private sectors may be due to sectoral differences in the content 'size' of jobs. In previous sections, we have shown that measured (or time-invariant unmeasured) differences in workers and in jobs can account for most, but not all of the Public-Private pay gap. The controls for job differences were, however, fairly coarse – primarily in the form of broad occupation categories, within which there could still be relevant sectoral differences. We now use a third data source to investigate the role of job-size differences, based on job evaluation, linked to remuneration data.

7.1 Data description

Data on job sizes and remuneration are obtained from Strategic Pay Ltd (SPL), a New Zealand company specialising in remuneration information and advice and job evaluation.[22] SPL collect remuneration data through surveys, which is then linked to information on the size of each job. The foundation for determining the size of jobs is a well-established job evaluation methodology (SP10®) that measures the sizes of jobs based on 10 factors (education, experience, scope, complexity, problem-solving, freedom to act, impact, interpersonal, delegated authority, and people management) that capture the job requirements rather than the characteristics of job-holders. Evaluated jobs are allocated points that reflect the relative job size. These points can be grouped into 46 'Grades' or into 22 'Bands', each spanning 2 Grades. SP10® data are not available

[22] Access was provided to a confidentialised dataset, under conditions of confidentiality and non-disclosure.

for all jobs. Some smaller jobs are evaluated using an alternative 5-factor job evaluation system (SP5®) that determines the job Grade and allocates the associated median points value for the grade. Finally, the majority of jobs in the SPL data are allocated a points value based on matching them to detailed 'job codes' (over 3,500 distinct job types across 73 'job functions'). Each job code is assigned an SP10® points value corresponding to the midpoint of the range of Grades associated with the job code.

We use a snapshot of recent SPL data from June 2025 containing information on around 236,000 jobs in over 1,200 firms. These are disproportionately larger firms: the median-sized firm in the SPL data employs about 60 workers, compared to the median size of fewer than 5 workers for all employing firms in New Zealand. The firms in the SPL data collectively employ almost a quarter of all employees in New Zealand and the data include information on about 40% of jobs in those firms. Reflecting this firm-size pattern, the SPL data has relatively good coverage of public sector entities.

Compared to Statistics New Zealand's Business Demography Data, SPL data include information from around 18% of large (100+ employees) enterprises, whose employment accounts for 46% of employees in large enterprises. Job data are available for around 40% of those employees. SPL coverage of smaller firms is lower, with 2% to 3% coverage of enterprises and employment in enterprises with 20-99 employees. Almost 90 percent of all employing enterprises in New Zealand have fewer than 20 employees, and these small and medium enterprises account for 27 percent of total employment. In the SPL data, only about a quarter of enterprises are in this size category, and the enterprises account for less than one percent of jobs in the SPL data.

Table 13 reports raw public-private pay gaps from the SPL data. Pay levels are captured as FTE annual rates of pay. We use information on both the base salary and the total remuneration paid for each job.[23] Average base salaries in the public sector are 2.0% higher than in the private sector. Total remuneration, however, is on average higher in the private sector, with public sector remuneration on average 2.6% lower. There is a greater prevalence of very high pay within the private sector, which tends to raise the private sector average of both base salary and total remuneration relative to the public sector. Comparing median pay levels, base salaries are 7.6% higher in the public sector than in the private sector and total remuneration is 4.9% higher. The final two columns of Table 13 show the corresponding public-private pay gaps measured as log-differences, which are less sensitive to the prevalence of very high pay. As in earlier sections, we

[23] Total remuneration includes the sum of all definite remuneration items i.e. base salary, cash payments, benefits and variable pay, such as incentive pay, and bonus components actually paid.

focus on log-differences as the benchmark measure of public-private pay gaps. These pay gaps are considerably smaller than the gaps discussed above based on the HLFS-IS or LEED data, based on more representative employment samples.

The second block of Table 13 provides comparable measures for the subsample of SPL data for which SP10® job evaluation data are available. This subsample covers disproportionally larger jobs, for which private sector pay is relatively high. All of the public-private pay gaps are negative, meaning that pay is higher in the private sector than in the public sector. Pay gaps base on log differences are –0.042 for base salary, and –0.083 for total remuneration.

In Figure 7 we document the relationship between pay and job size in the public and private sectors based on SPL data. Panel (a) shows these relationships together with the pay gap between the public and private sectors. The upward sloping lines show that pay increases with job size in both sectors, and for both base salary and total remuneration. Visually, the differences appear small, apart from the low private sector base salary paid for small jobs and the relatively high private sector total remuneration especially for larger jobs. The two dotted lines show the public-private (log-difference) pay gaps for base salary and for total remuneration. They are both positive for small jobs – public sector workers in small jobs tend to be paid about 5% more. However, the pay gap is negative for larger jobs. For job sizes where public sector workers are most prevalent, public sector workers are paid less than private sector workers. The public-private gap in total remuneration is always lower (i.e. less positive or more negative) than the gap in base salary, meaning that remuneration other than base salary is larger in the private sector than in the public sector at all job sizes. The average (log-difference) pay gaps reported in Table 13 (0.057 for base salary and 0.025 for total remuneration) are the averages of the dotted lines in Figure 7, weighted by the density of job sizes.

The lower public-private pay gap in the SPL data reflects the fact that low-paid jobs are disproportionately in small firms, which are under-represented in the SPL data. In Figure 7(b) we plot the density of public sector and private sector jobs in the SPL data, ordered by job size, as measured by SPL points. A relatively higher proportion of private sector jobs are small jobs, with slight over-representation of very large jobs as well. However, compared with Figure 3(b), which uses HLFS-IS mean pay within occupation as a proxy for job size, the SPL data has a much smaller lower tail of small jobs, particularly for the private sector.

We repeat this analysis for the subsample of jobs for which SP10® evaluation data are available in Figure 8. The pay differences in Figure 8(a) are broadly similar to those in Figure 7(a), although the pay gaps appear to be lower (either less positive or more negative) across the job size scale,

and thus switch from positive to negative at lower job size. Figure 8(b) shows that public and private sector in this sample are more comparably sized than in the wider SPL sample (the difference in average job size is less than 1%).

7.2 Method: log(remuneration) regression

As documented in earlier sections, public sector and private sector jobs differ in many respects, so that a comparison of raw differences is likely to be misleading. In this section, we provide estimates of the public-private pay gap in the SPL data, controlling for industry, occupation, or job size. We also provide separate estimates for the subset of SPL jobs that have been evaluated using the most detailed (SP10®) job evaluation method. We regress remuneration, either log(base salary) or log(total remuneration), on a public sector indicator, with specifications that include alternative sets of controls (X_i):

$$\ln Rem_i = \alpha + \gamma_{Public} + X_i\beta + e_i \qquad (4)$$

where the controls are indicator (dummy) variables for industry, job function or job-size points. The resulting estimates are shown in Table 14, with the top panel showing estimates for base salary regressions and the lower panel showing analogous 'total remuneration' estimates. The first column is from a regression that does not include any controls (X_i is omitted from equation (4)). The public sector coefficients are just the raw log-differences as reported in Table 13. We include indicator controls for 49 SPL industry groupings in column (2), which increases the gap estimates to 0.066 for base salary and to 0.056 for total remuneration.

In column (3), we control for occupational differences, using a set of 73 occupation-based 'Job function' codes recorded in the SPL data.[24] Controlling for public-private differences in job function in column (3) reduces the estimated size of public-private pay gaps, as did controlling for occupational differences in section 4 above. The base salary premium is reduced to 0.4% (not statistically significant) and the total remuneration gap is reduced to –2.1%, meaning that, within job function, public sector employees on average receive essentially the same basic salary, and lower total remuneration than their private sector counterparts. The majority of SPL jobs are allocated a points level based on Job Codes, so controlling for 1,138 different points scores (column 4) results in estimated pay gaps that are similar to the gaps estimated when controlling only for job function.

[24] Each job function is subdivided into multiple job codes, reflecting career progressions and variations within job function. The median number of job codes associated with a job function is 30, though the number ranges from 1 to over 400.

In column (5), we restrict attention to the subsample of jobs for which an SP10® evaluation has been done, which restricts the sample to about 15 percent of jobs in the SPL data. This provides the most reliable like-for-like comparison of jobs between the public and private sectors. Compared with the raw base salary difference for this subsample (–0.042, as shown in the lower panel of Table 13), the resulting estimates of the pay gap are further reduced, to –3.7% for base salary and –8.2% for total remuneration. Based on this analysis we conclude that, controlling for detailed job characteristics, public sector jobs are paid less than comparable private sector jobs.

The final two columns in Table 14 repeat the specifications in columns (4) and (5) allowing for separate male and female public-private sector gaps. The results imply the public-private gaps are always negative for male workers: -0.02 in base salary and -0.06 in total remuneration for all jobs, and -0.06 in base salary and -0.12 in total remuneration for the SP10® subsample. For female workers we estimate positive gaps for both base salary (0.04) and total remuneration (0.02) across all jobs, but negative gaps (higher pay in the private sector) for base salary (-0.01) and total remuneration (-0.05) gaps when restricting attention to the SP10® subsample. The pattern of larger (more positive or less negative) public-private gaps for females than males is consistent with the international research reviewed in section 2.2.

The SP10® evaluation data also provide insights into how public sector and private sector jobs differ. The raw public-private gaps shown in the lower panel of Table 13 are smaller and uniformly negative for this sample of jobs than for the full SPL sample. For example, the mean log(Base salary) difference is –0.042 compared to 0.057 for the full sample. The fact that the public sector-private sector pay gap is more negative for larger jobs than for smaller jobs (see Figure 8(a)) reflects the lower returns to job size in the public sector. Small jobs are paid more highly in the public sector whereas for mid-sized or larger jobs, pay is higher in the private sector.

We use these data to conduct a Blinder-Oaxaca decomposition of the public-private sector log(Base salary) pay gap into composition, returns and interaction effects associated with the ten factors. The factor composition differences provide a small positive contribution (+0.5%) to the overall –4.2% gap for this sample; and the combined returns and interaction effects account for –4.7%. Figure 9 summarises the composition effect contributions from each of the 10 factors used in the SP10® job evaluation methodology: the factors are ordered by their contribution to public-private differences in job size. The average public and private sectors sizes appear broadly similar across the factors. The educational requirements of jobs make the strongest positive contribution to pay gaps (1.5% contribution to the 0.5% composition effect). This is consistent with the important role played by employees' highest qualifications in explaining pay gaps as reported in

section 4. In terms of job size, public sector jobs are also slightly larger based on experience and complexity, although these differences do not contribute significantly to pay differences. Public sector jobs are slightly smaller on average in terms of people management, delegated authority, and impact. Of these, only differences in impact contribute noticeably to the pay gap (contribution of –1.2%). This Blinder-Oaxaca analysis implies that, overall, differences in job size account for little of the public sector pay gap in the SP10® data. This is consistent with the estimates in column 5 of Table 14, showing that controlling for points differences using fixed effects reduces the raw gap only from –4.2% to –3.7%, with this remaining gap due to public sector and private sector workers being paid differently for job attributes.

8 Summary

The various estimates of the Public-Private pay gap that have been documented above are summarised in Table 15. The raw gap from representative survey and administrative data range from 22% (LEED log-difference of 0.20) to 25% (QES). On average, public sector employees earn substantially more than private sector employees. The SPL-based estimates of the overall gap are smaller (0.06 for base salary and 0.03 for total remuneration), reflecting the over-representation in these data of larger organisations and higher-paid jobs.[25] The remainder of the pay gap measures in Table 15 are estimates of the pay gap controlling for differences in workers or jobs, using the various dataset-specific approaches documented above.

Analysis of the HLFS-IS and the SPL data confirms that public sector jobs are more concentrated in higher-paid occupations and larger jobs, where the public sector pay gap is smaller. The pattern of larger public sector premiums for lower-paid jobs is consistent with the public service pay guidance from 2021 that entailed “targeting pay increases to low paid roles and holding the pay for higher earners and senior leaders” (Public Service Commission, 2021).

The raw gap is not a reliable indicator because it is not based on a like-for-like comparison. Public and private sector employees and jobs are different in important ways. The controls and methods that we have used account for a large proportion of the raw mean difference between public and private sector pay. Within-industry comparisons of public and private sector pay are challenging due to the concentration of public sector employment in a few specific industries where there are few or no private sector employers.

[25] The omission of smaller and lower-paid jobs raises the private sector average pay but because there are relatively few such jobs in the public sector the public sector average is less affected.

The various analyses presented in this paper are complementary, each controlling for a different set of differences between public and private sector employees, firms, and jobs. Overall, we find that education and occupation play a significant role in explaining the pay gap. Public sector employees have higher levels of qualification, which the SPL data identify as requirements for the sort of jobs they work in. Occupational differences between public and private sector jobs also contribute to sectoral pay differences. We identify the contribution of occupational differences both in HLFS-IS data and in the SPL data.

Controlling as best we can for differences in employees and jobs, our HLFS-IS and LEED estimates suggest a public-private pay gap of 0.05 to 0.08, as shown in the second row of Table 15. This represents only 20 to 40 percent of the raw gap. The SPL analysis provides the most granular controls for differences in public and private sector jobs, based on job-evaluation measures of job size. Using these controls, we estimate that there is a public-private base salary gap of only 0.01, and that total remuneration is higher in the private sector, by 0.03 (about 3%). The total remuneration difference reflects higher private sector payments beyond base salary particularly for higher paid, larger jobs. Using the most detailed controls for job differences, using SP10®-evaluated jobs, we conclude that public sector jobs are paid less than equivalently-sized private sector jobs, both in terms of base salary (–0.04) and total remuneration (–0.08)[26]. Within the public sector, we report small public-private pay gaps for local government jobs, and relatively large differences within industries where public and private sector jobs and workers are likely to differ most – public order and safety, and health.

This study has provided a range of relatively sound partial-adjustment estimates of the public-private pay gap but there are almost certainly unmeasured or unobservable differences that could potentially account for residual positive or negative public-private pay gaps. For instance, there could be sectoral differences in job security, flexibility, career structures, training or learning opportunities, or other conditions of work that could result in justifiable differences in pay, or in selectivity of which workers choose to work in each sector.

9 Notes on future directions/ further work

This section lists a range of potential extensions to the analysis presented above that could further extend our understanding of public-private pay gaps in New Zealand.

[26] See the bottom block of estimates in Table 15.

Additional covariates

Using the methods and data documented above, it would be possible to enrich the range of covariates used, to improve the like-for-like comparison of public and private sector pay. Additional covariates could include firm size, job tenure, or more detailed qualification information (e.g. level or field of study).

Estimation using subsets of the data

In the current study, the private sector includes not-for-profit firms, which generally have lower pay levels. Comparison of public sector pay with pay in private-for-profit firms would provide an alternative perspective.

Given the difference in pay gaps for different job sizes or between high and low-paid occupations, a more detailed analysis of gaps at different points in the pay distribution could be worthwhile – e.g. unconditional quantile regressions; focus on low paid occupations.

Investigate worker-level dynamics of public-private pay gaps

The comparison of LEED fixed effects and job change patterns in sections 5 and 6 suggest that there are complex patterns of selectivity and pay dynamics (e.g., tenure effects) at play, which differ across sectors. A more detailed analysis of these issues would shed light on the underlying causes and dynamics of public-private pay gaps.

Alternative methods

The current study has been limited to analysis of existing available datasets. More detailed qualitative or institutional analysis of job differences could reveal the role of public-private differences in job security, career progression, skill transferability, and broader terms and conditions, including those covered in collective agreements.

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Tables and Figures

Table 1: Sectoral summary (LEED data)

	Share of employ-ees	Share of employee FTE	Mean FTE per employee	Share of empl'ees who are full-time full-year	Mean log(FTE monthly earnings))	Public Private gap
Private Sector	80.0%	77.4%	68%	33%	8.67	0.00
Public Sector	18.3%	20.7%	80%	52%	8.87	0.19
• Central (non-trading)	14.9%	16.8%	79%	51%	8.87	0.20
• Local (non-trading)	1.6%	1.8%	80%	55%	8.81	0.14
• Other public sector	1.8%	2.1%	81%	55%	8.89	0.21
Other (mixed, RoW, HH)	1.7%	2.0%	82%	55%	8.95	0.27
Total	100.0%	100.0%	70%	37%	8.72	0.05

Source: LEED Labour Tables (Fabling & Maré, 2015) and sector classification. Data are for 2000-2024. Earnings are measured in constant $2025q1 values.

Table 2: Public sector employment is concentrated in a few industries

Industry (ANZSIC06)	% of total FTE employment	% of public sector FTE employment	Public sector share of industry FTE employment
O75/76: Public Administration & Defence	5.1%	24.4%	99.8%
P802: School Education	5.1%	22.1%	90.1%
Q84: Hospitals	4.7%	20.7%	91.2%
P81: Tertiary Education	2.4%	10.0%	85.5%
O771: Public Order and Safety Services	2.1%	7.9%	78.2%
I: Transport, Postal and Warehousing*	4.8%	3.3%	13.9%
M691: Scientific Research Services	0.5%	1.4%	62.9%
O772: Regulatory Services	0.3%	1.2%	75.2%
P801: Preschool Education	1.1%	1.0%	20.3%
M: Prof, Scient & Tech Serv (other than M691)	7.0%	0.8%	2.5%
Q: Health Care & Soc Assist (other than Q84)	6.1%	0.5%	1.7%
P82: Adult, Community and Other Education	0.6%	0.3%	11.2%
Other Industries*	60.3%	6.3%	2.2%
Total	100%	100%	20.7%

Source: LEED Labour Tables (Fabling & Maré, 2015). 2000-2024

Notes: Ordered by descending public sector employment

* only a small minority of public sector employment in asterisked Industries is the 'non-trading' subsector.

Table 3: Key worker and job differences: Income Survey (pooled years)

	All	Private sector	Public sector	Public: non-trading	Public Central govt	Public: Central NT
Share of employment	100%	78%	22%	19%	19%	17%
Earnings						
ln(real wage)	3.52	3.47	3.69	3.69	3.69	3.69
• (std dev)	(0.41)	(0.40)	(0.39)	(0.38)	(0.39)	(0.38)
• (se of mean)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
• Wage gap (log-difference)		Base	0.22	0.22	0.23	0.22
Hourly wage	$36.58	$34.82	$42.88	$42.73	$43.06	$42.78
• (std dev)	(16.55)	(15.99)	(16.96)	(16.53)	(16.96)	(16.50)
• (se of mean)	($0.04)	($0.05)	($0.09)	($0.10)	($0.10)	($0.10)
• Wage gap (log-difference)		Base	23%	23%	24%	23%
Demographics						
* Female	49%	46%	62%	65%	64%	66%
* Age	39.6	38.5	43.3	43.6	43.5	43.7
* Migrant	31%	31%	29%	29%	29%	30%
Location						
* Auckland UA	32%	33%	28%	28%	29%	28%
* Wellington UA	10%	8%	17%	17%	17%	17%
* Other Main UA	35%	35%	36%	37%	36%	37%
* Secondary UA	5%	6%	4%	4%	4%	4%
Highest Qualification						
* No qualification	12%	14%	5%	4%	5%	4%
* School qualification	28%	32%	17%	15%	16%	15%
* Post-school qualification	27%	28%	21%	19%	20%	18%
* Degree or higher	33%	26%	58%	61%	60%	63%
Job characteristics						
* Full-time	83%	82%	86%	84%	85%	84%
* Occup: Mgr & Prof	40%	34%	62%	65%	64%	67%
* Occup: mid-range	34%	35%	33%	31%	31%	30%
* Occup: Sales, Op, Lab	26%	31%	6%	3%	4%	3%
* Indus: Primary	4%	5%	0%	0%	0%	0%
* Indus: Goods	20%	25%	3%	0%	2%	0%
* Indus: Services	76%	70%	97%	100%	98%	100%

Notes: all estimates are weighted by the HLFS sample weight. Real wage is ($2025q1) actual hourly earnings of wage and salary employees in their main job. Occupations classified according to ANZSCO Mid-range occupations include 3:Technicians & Trade workers, 4:Community and Personal Services, and 5:Clerical and Administrative workers. The 'Sales, Op, Lab' group includes 6:Sales workers, 7:Machinery operators and drivers, and 8:Labourers.
Industry coding uses ANZSIC06. Primary (A-B), Goods (C-E), Services (F-R).

Table 4: Summary of wage gap decomposition (HLFS-IS)

	All public	Public non-trading	Central Govt	Local Govt	Central non-trading	Local non-trading
Public Sector mean	3.69***	3.69***	3.69***	3.65***	3.69***	3.67***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
Private sector mean	3.47***	3.47***	3.47***	3.47***	3.47***	3.47***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Gap	0.22***	0.22***	0.23***	0.18***	0.22***	0.21***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
Summary of decomposition						
Composition effect	0.18***	0.18***	0.18***	0.14***	0.18***	0.17***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
Returns effect	0.06***	0.06***	0.06***	0.02	0.06***	0.02
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.03)
Interaction effect	-0.01**	-0.02	-0.02*	0.03	-0.02	0.01
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.03)
Contributions to Composition						
* Job factors	0.09***	0.09***	0.09***	0.07***	0.09***	0.09***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
* Education factors	0.05***	0.05***	0.05***	0.02***	0.05***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
* Individual factors	0.03***	0.03***	0.03***	0.04***	0.03***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
* Industry factors	0.01***	0.00***	0.00	0.01***	0.00	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Contributions to Returns						
* Job factors	0.20***	0.18***	0.22***	0.02	0.20***	0.01
	(0.04)	(0.04)	(0.04)	(0.09)	(0.04)	(0.10)
* Individual factors	0.16***	0.16***	0.19***	-0.04	0.17***	-0.06
	(0.02)	(0.03)	(0.03)	(0.05)	(0.03)	(0.06)
* Education factors	0.02***	0.02***	0.02***	0.02*	0.02***	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
* Location factors	-0.01**	-0.02***	-0.01*	-0.03**	-0.02**	-0.03*
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
* intercept	-0.27***	-0.28***	-0.32***	0.01	-0.31***	0.02
	(0.05)	(0.06)	(0.05)	(0.14)	(0.06)	(0.16)
Public obs	44,511	38,610	39,132	5,379	34,845	3,765
Private obs	154,017	154,017	154,017	154,017	154,017	154,017
Total obs	198,528	192,627	193,152	159,396	188,862	157,782

Notes: all estimates are weighted by the HLFS sample weight.

Table 5: Summary of wage gap decomposition by industry and occupation (HLFS-IS)

	Occupation (ANZSCO)			Industry (ANZSIC)		
	24: Education	25: Health	4: Commu-nity & Pers Serv	O77: Publ Order, safety & regul serv	P80: Pre-school & School educ	Q84: Hospitals
Public Sector mean	3.67***	3.83***	3.49***	3.73***	3.56***	3.72***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)
Private sector mean	3.46***	3.71***	3.24***	3.41***	3.42***	3.54***
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)
Gap	0.21***	0.12***	0.26***	0.32***	0.14***	0.18***
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Summary of decomposition						
Composition effect	0.13***	0.057***	0.21***	0.20***	0.079***	0.13***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Returns effect	0.10***	0.07***	0.10***	0.15***	0.07***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Interaction effect	-0.02***	-0.01*	-0.04***	-0.04***	-0.01***	0.00
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)
Contributions to Composition						
* Job factors	0.01***	0.02***	0.10***	0.09***	0.01*	0.09***
	(0.00)	(0.00)	(0.00)	-(0.01)	(0.00)	-(0.01)
* Education factors	0.04***	0.01***	0.01***	0.03***	0.03***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
* Individual factors	0.06***	0.00	0.05***	0.07***	0.05***	0.00
	(0.00)	(0.00)	(0.00)	-(0.01)	(0.00)	(0.00)
* Industry factors	0.02***	0.01***	0.04***	#DIV/0!	#DIV/0!	#DIV/0!
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Contributions to Returns						
* Job factors	1.72***	0.83**	0.33**	-0.80***	0.98***	-0.35*
	(0.42)	(0.33)	(0.15)	(0.26)	(0.16)	(0.20)
* Individual factors	0.45***	0.10	0.25***	0.30**	0.02	0.48***
	(0.08)	(0.11)	(0.05)	(0.12)	(0.08)	(0.13)
* Education factors	-0.04	-0.20***	0.00	-0.01	0.03	-0.01
	(0.05)	(0.06)	(0.01)	(0.03)	(0.02)	(0.03)
* Industry factors	0.05	-0.04	0.27***			
	(0.24)	(0.13)	(0.09)			
* intercept	-2.11***	-0.61	-0.67***	0.84***	-0.94***	-0.05
	(0.50)	(0.38)	(0.18)	(0.28)	(0.18)	(0.21)
Public obs	8,844	5,397	6,081	3,573	9,768	6,585
Private obs	3,540	3,327	13,389	1,230	2,892	1,212
Total obs	12,387	8,727	19,467	4,800	12,660	7,797

Notes: all estimates are weighted by the HLFS sample weight.

Table 6: Summary of wage gap decomposition by sex and period (HLFS-IS)

	Men	Women	2009-2013	2014-2018	2019-2024
Public Sector mean	3.76***	3.64***	3.63***	3.68***	3.73***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Private sector mean	3.52***	3.40***	3.38***	3.45***	3.54***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Gap	0.24***	0.24***	0.25***	0.23***	0.19***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Summary of decomposition					
Composition effect	0.20***	0.20***	0.20***	0.19***	0.15***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Returns effect	0.04***	0.07***	0.06***	0.05***	0.06***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Interaction effect	0.00	-0.02***	-0.02	-0.01	-0.01*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Contributions to Composition					
* Job factors	0.09***	0.10***	0.10***	0.10***	0.08***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
* Education factors	0.04***	0.04***	0.05***	0.05***	0.04***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
* Individual factors	0.06***	0.03***	0.03***	0.03***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
* Industry factors	0.00	0.01***	0.01***	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Contributions to Returns					
* Job factors	0.12**	0.29***	0.28***	0.19***	0.13**
	(0.06)	(0.05)	(0.08)	(0.07)	(0.05)
* Individual factors	0.14***	0.25***	0.00	0.15***	0.26***
	(0.04)	(0.03)	(0.05)	(0.04)	(0.03)
* Education factors	0.02*	0.02***	0.03***	0.02**	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
* Industry factors	-0.01	-0.03	-0.06**	-0.03	0.05
	(0.02)	(0.03)	(0.03)	(0.03)	(0.04)
* intercept	-0.22***	-0.41***	-0.22**	-0.28***	-0.36***
	(0.08)	(0.07)	(0.09)	(0.09)	(0.08)
Public obs	16,278	28,233	12,924	13,359	18,228
Private obs	80,823	73,194	45,363	47,454	61,203
Total obs	97,101	101,427	58,287	60,816	79,428

Notes: all estimates are weighted by the HLFS sample weight.

Table 7: ln(FTE Earnings) regressions (LEED)

	Raw	+time effects	+age*sex	+worker FE
	(1)	(2)	(3)	(4)
Central Govt (NT)	0.198***	0.200***	0.218***	0.081***
	(0.001)	(0.001)	(0.001)	(0.001)
CG (other)	0.231***	0.242***	0.227***	0.103***
	(0.002)	(0.002)	(0.002)	(0.001)
Local Govt (NT)	0.139***	0.137***	0.122***	0.043***
	(0.002)	(0.002)	(0.002)	(0.001)
LG (other)	0.176***	0.176***	0.095***	0.048***
	(0.003)	(0.003)	(0.003)	(0.002)
Public (changing subgroup)	0.247***	0.227***	0.255***	0.077***
	(0.011)	(0.011)	(0.010)	(0.006)
Other firms	0.428***	0.408***	0.375***	0.148***
	(0.020)	(0.019)	(0.017)	(0.012)
Firm changes sector	0.273***	0.276***	0.226***	0.086***
	(0.002)	(0.002)	(0.002)	(0.001)
Time effects		Y	y	Y
Age*sex			Y	Y
Worker FE				Y
R-squared	0.033	0.075	0.251	0.823

Notes: N=47.5m. Each column is from a separate regression. Regressions are weighted by FTE.
Significance indicators: * p<0.10, ** p<0.05; *** p<0.01.

Table 8: ln(FTE Earnings) regression –industry interactions (LEED)

	P80: Pre-school & School education	M69: Profess., Scientific, Technical Services	O77: Public Order, Safety, Regulat. Services	Q84: Hospitals	P81: Tertiary Education	Other industries
Central Govt (NT)	0.051***	0.043***	0.172***	0.126***	0.070***	0.111***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)
CG (other)		0.092***	0.091***		0.170***	0.109***
		(0.005)	(0.005)		(0.037)	(0.001)
Local Govt (NT)		0.084			-0.140	0.044***
		(0.056)			(0.240)	(0.001)
LG (other)		0.044***		0.038**	0.082**	0.049***
		(0.011)		(0.016)	(0.041)	(0.002)
Other Public	0.028***	0.131***				0.087***
	(0.009)	(0.017)				(0.008)
Other firms	-0.101***	0.122***			-1.292***	0.152***
	(0.001)	(0.039)			(0.002)	(0.012)
Firm changes sector	0.038***	0.025***			0.078***	0.105***
	(0.002)	(0.004)			(0.008)	(0.001)

Notes: N=47.5m; R-squared=0.824. All coefficients are from a single regression. Regressions are weighted by FTE.

Significance indicators: * p<0.10, ** p<0.05; *** p<0.01.

Table 9: Inter-sectoral worker (out)flows and earnings changes

		Not employed	Same Job	Private sector	Public (Central NT)	Other sectors
				(a) Transition rate		
	Share of total					
Private Sector	43%	12%	58%	19%	7%	3%
Public (Central NT)	45%	11%	76%	4%	7%	1%
Other sectors	12%	11%	75%	8%	3%	3%
Total	100%	12%	68%	11%	7%	2%
				(b) Median dlnwage		
	overall					
Private Sector	3.5%	.	2.6%	3.5%	9.6%	7.4%
Public (Central NT)	2.4%	.	2.3%	2.4%	2.9%	4.1%
Other sectors	2.2%	.	2.1%	2.3%	3.7%	3.4%
Total	2.8%	.	2.4%	3.2%	5.9%	6.1%
				(c) Mean Age		
Private Sector	36.5	37.8	38.0	32.8	33.4	33.2
Public (Central NT)	42.5	43.0	42.9	36.7	41.3	39.2
Other sectors	41.2	41.9	42.0	34.5	38.0	39.0
Total	39.7	40.5	41.0	33.6	37.6	35.3

Notes: Transitions are recorded for workers employed between 2000 and 2023, and their outcomes in the following year. In panel (b), log-differences are treated as percentage changes.

Table 10: Inter-sectoral worker (out)flows earnings changes: by sub-period

	Same Job	Private sector	Public (Central NT)	Other sectors
		2000-2008		
Private Sector	3.6%	4.8%	9.6%	8.0%
Public (Central NT)	2.7%	3.5%	3.7%	5.3%
Other sectors	2.6%	3.3%	4.4%	4.4%
Total	3.0%	4.5%	6.3%	6.9%
		2009-2013		
Private Sector	1.4%	1.8%	6.3%	5.3%
Public (Central NT)	1.0%	0.4%	1.6%	2.0%
Other sectors	1.4%	0.4%	1.7%	1.2%
Total	1.2%	1.5%	3.3%	3.6%
		2014-2018		
Private Sector	2.8%	3.2%	10.1%	8.0%
Public (Central NT)	2.4%	2.7%	2.9%	4.1%
Other sectors	2.5%	2.5%	3.1%	4.0%
Total	2.6%	3.0%	6.3%	6.5%
		2019-2023		
Private Sector	2.0%	4.0%	11.0%	7.6%
Public (Central NT)	2.9%	1.8%	4.0%	4.5%
Other sectors	1.5%	2.2%	5.6%	4.9%
Total	2.4%	3.3%	7.6%	6.6%

Notes: Transitions are recorded for workers employed between 2000 and 2023, and their outcomes in the following year. log-differences are treated as percentage changes.

Table 11: Worker flow transitions (LEED)

	% of total emp	Not employed	To same job	To same sector	To other sectors	To O: Pub Adm & Safety	To P80: School	To P81/2: Other Ed	To Q: Health	To Other Inds
From Private Sector					Not CG-NT	To Public sector (CG-NT)				
O: Pub Adm&Safety	0.34%	12%	54%	21%	3%	6%	1%	1%	2%	0%
P80 (School)	1.31%	12%	65%	13%	1%	1%	7%	1%	0%	0%
P81/2 (Other Ed)	1.09%	13%	60%	14%	2%	2%	4%	4%	1%	0%
Q: Health	6.56%	12%	63%	15%	1%	1%	2%	1%	5%	0%
Other inds	33.53%	13%	57%	21%	3%	2%	1%	1%	1%	0%
From Public Sector (Central (NT)					Not Private	To Private Sector				
O: Pub Adm&Safety	11.81%	10%	81%	4%	1%	0%	0%	0%	1%	3%
P80 (School)	14.08%	11%	70%	15%	1%	0%	1%	0%	1%	2%
P81/2 (Other Ed)	6.29%	13%	74%	5%	1%	0%	0%	1%	1%	5%
Q: Health	11.24%	11%	80%	5%	0%	0%	0%	0%	2%	2%
Other inds	1.73%	11%	78%	4%	1%	0%	0%	0%	0%	5%

Notes: "To same sector" column refers to the private sector in the first panel, and the CG-NT sector in the second panel; "To other sectors" column refers to other Not CG-NT public sectors. P80 industry includes preschool and school education; P81/2 industry includes tertiary and other (adult, community and other) education.

Table 12: Mean wage change (From worker flows in LEED)

	To Same job	To Same sector	To Other sectors	To O: Pub Adm & Safety	To P80: School	To P81/2: Other Ed	To Q: Health	To Other Inds
From Private Sector			Not CG-NT	To Public sector (CG-NT)				
O: Pub Adm&Safety	3.0%	4.0%	9.8%	13.8%	9.2%	7.5%	17.2%	17.2%
P80 (School)	2.6%	4.0%	9.6%	19.0%	6.9%	7.8%	20.6%	13.9%
P81/2 (Other Ed)	2.8%	5.2%	12.3%	17.0%	12.3%	8.3%	19.0%	15.3%
Q: Health	2.8%	4.4%	11.5%	20.1%	10.2%	5.5%	19.0%	13.0%
Other inds	3.2%	4.6%	8.5%	15.4%	11.3%	3.3%	19.0%	9.4%
From Public Sector (Central (NT)			Not private	To Private Sector				
O: Pub Adm&Safety	3.3%	-7.9%	1.7%	-14.1%	-11.3%	-10.1%	-12.8%	-6.9%
P80 (School)	2.8%	2.5%	1.5%	8.5%	1.9%	-4.4%	2.0%	3.5%
P81/2 (Other Ed)	2.6%	12.7%	15.9%	5.2%	2.0%	2.4%	4.2%	15.2%
Q: Health	3.4%	-4.8%	2.6%	-8.3%	-6.9%	-22.9%	-4.5%	-3.8%
Other inds	2.5%	1.1%	6.9%	2.7%	-8.3%	-3.7%	-6.8%	1.9%

Notes: see notes to Table 11.

Table 13: Public-Private pay gap (SPL data)

	As % of private sector pay		Log-difference	
	Base salary	Total remuneration	log(Base salary)	log(Total remuneration)
Mean Gap	2.0%	-2.6%	0.057	0.025
Median Gap	7.6%	4.9%	0.073	0.048
		SP10-evaluations only		
Mean Gap	-7.4%	-12.3%	-0.042	-0.075
Median Gap	-8.0%	-11.6%	-0.083	-0.123

Source: Strategic Pay Ltd data (June 2025).

Table 14: Regression estimates of the Public Sector Premium (SPL data)

	All jobs (1)	All jobs (2)	All jobs (3)	All jobs (4)	Sp10® (5)	All jobs (6)	Sp10® (7)
				(a) Base salary			
Public Sector	0.057***	0.066***	0.004*	0.005***	-0.037***		
	(0.002)	(0.003)	(0.002)	(0.001)	(0.002)		
Public*Male						-0.018***	-0.064***
						(0.001)	(0.003)
Public*Fem						0.040***	-0.014***
						(0.001)	(0.003)
control vars		Industry	Job Function	Points	Points	Points	Points
Number FE		49	73	1,138	1,108	1,138	1,108
N	235,941	235,941	235,941	235,686	36,869	235,686	36,869
R-squared	0.005	0.123	0.337	0.796	0.908	0.801	0.910
				(b) Total Remuneration			
Public Sector	0.025***	0.056***	-0.021***	-0.027***	-0.082***		
	(0.002)	(0.003)	(0.002)	(0.001)	(0.002)		
Public*Male						-0.059***	-0.119***
						(0.001)	(0.003)
Public*Fem						0.017***	-0.051***
						(0.001)	(0.003)
control vars		Industry	Job Function	Points	Points	Points	Points
Number FE		49	73	1,138	1,108	1,138	1,108
N	235,941	235,941	235,941	235,686	36,869	235,686	36,869
R-squared	0.001	0.115	0.322	0.781	0.904	0.789	0.907

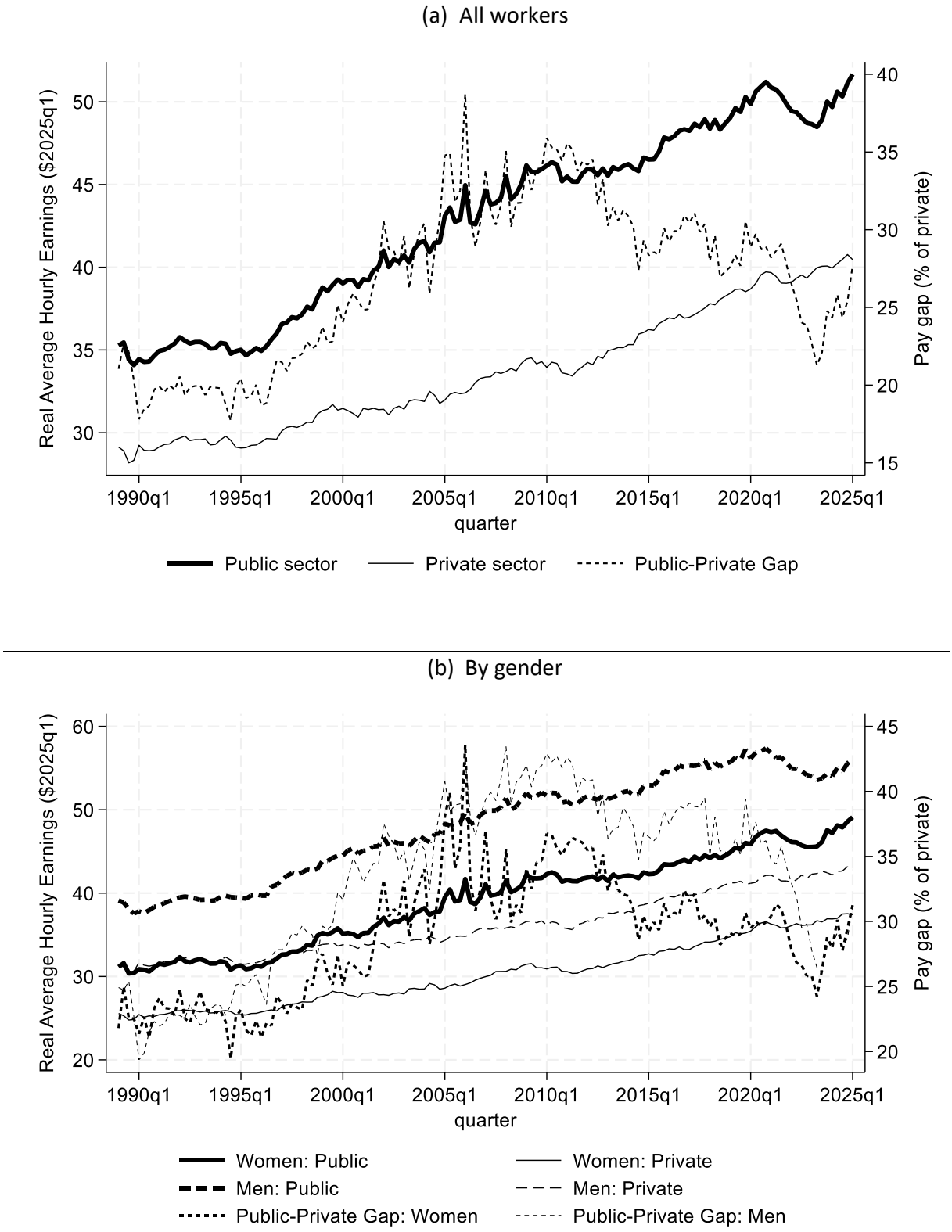
Source: Strategic Pay Ltd data (June 2025).
Notes: * p<0.10, ** p<0.05; *** p<0.01.

Table 15: Summary of public sector-private sector pay gap estimates

	QES	HLFS-IS	LEED (CG-NT)	SPL: Base salary	SPL: Total Rem
Raw difference	25%	0.22	0.20	0.06	0.03
Estimated with controls		0.05	0.08	0.01	-0.03
Subsets (all with controls)					
Sex					
• Men		0.06	0.01	-0.02	-0.06
• Women		0.07	0.04	0.04	0.02
Sector					
• Public-non-trading		0.05			
• Central Government		0.04			
• Local Government		0.05†			
• Central Government Non-trading		0.04	0.08		
• Local Government Non-trading		0.03†	0.04		
• Central Government (other)			0.10		
• Local Government (other)			0.05		
Occupation (NZSCO)					
• Education (24)		0.08			
• Health (25)		0.06			
• Community & Pers Serv (4)		0.06			
Industry (ANZSIC)					
• Public order safety defence (O77)		0.11	0.08		
• Educ – Schools (P80)		0.06	0.05		
• Educ – Tertiary& Adult (P81)			0.07		
• Health – Hospitals (Q84)		0.05	0.17		
• Prof & Techn Services (M69)			0.04		
Period					
• 2009-13		0.04			
• 2014-18		0.04			
• 2019-24		0.05			
SP10®-Evaluated jobs only					
• Overall				–0.04	–0.08
• Women				–0.01	–0.05
• Men				–0.06	–0.12

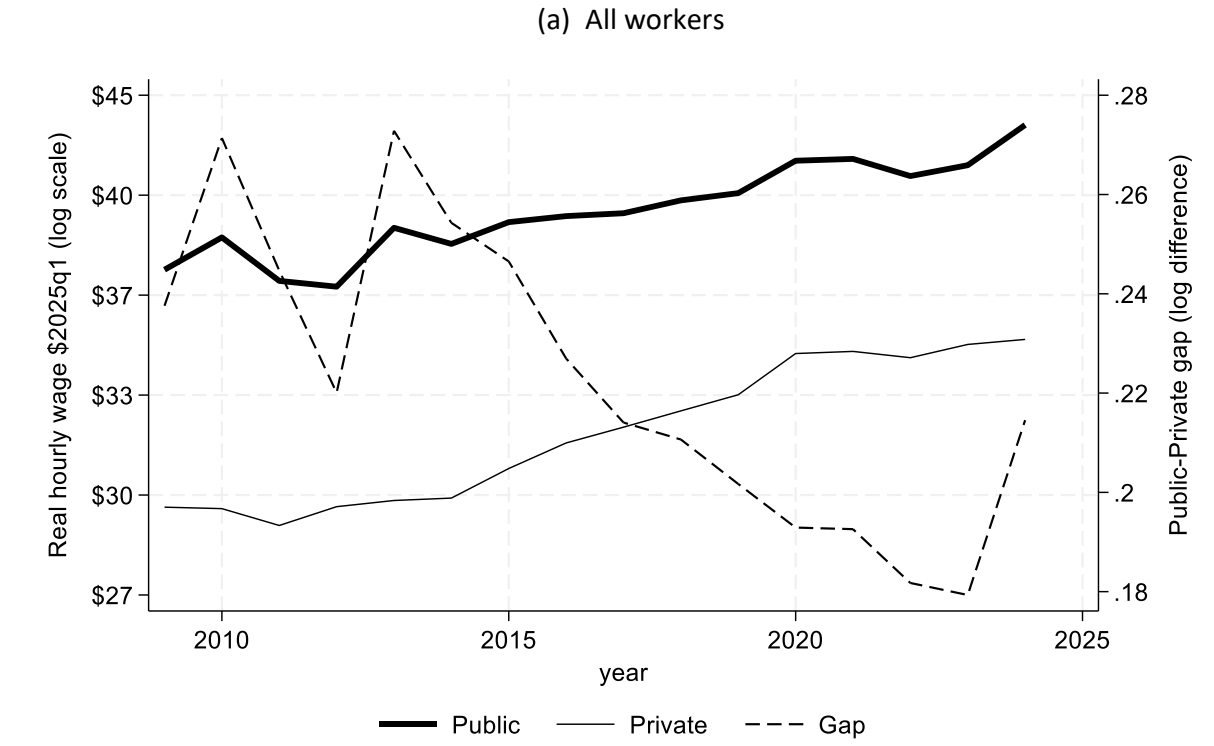
Notes: Pay gaps are reported as log-differences, except for QES (25% equates to a log difference of 0.22). All differences are statistically significant ($p<0.01$) except for those marked with †. The LEED column is for the CG-NT subset of the public sector (except for sector subsets). All other columns are for the public sector as a whole. Estimates for subsets are based on composition-adjusted pay gaps from decompositions or fixed-effects estimates.

Figure 1: Public-private pay gaps (QES)



Source: Quarterly Employment Survey (Infoshare table QEM - Average Hourly Earnings by Sector and Sex (Qrtly-Mar/Jun/Sep/Dec))

Figure 2: Public-private pay gap: HLFS-IS



Source: HLFS-IS 2009-2024. Public sector means are for the entire public sector.

Figure 3: Public-private differences in occupational pay and wage (IS)

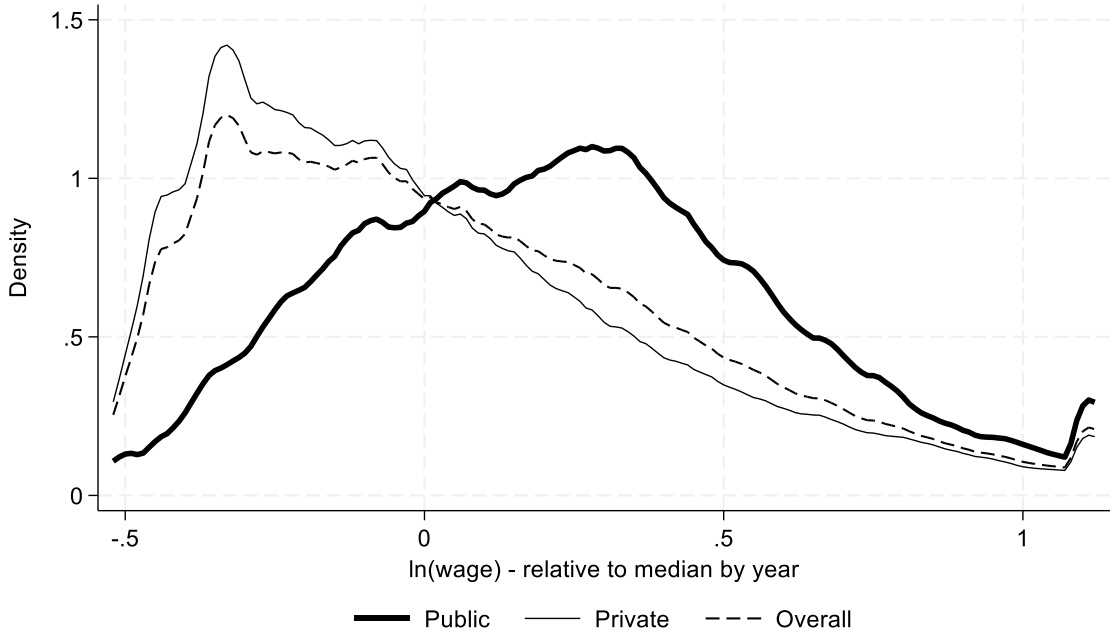
(a) Hourly wage and gap, by occupational pay and sector

(b) Density of occupational pay, by sector

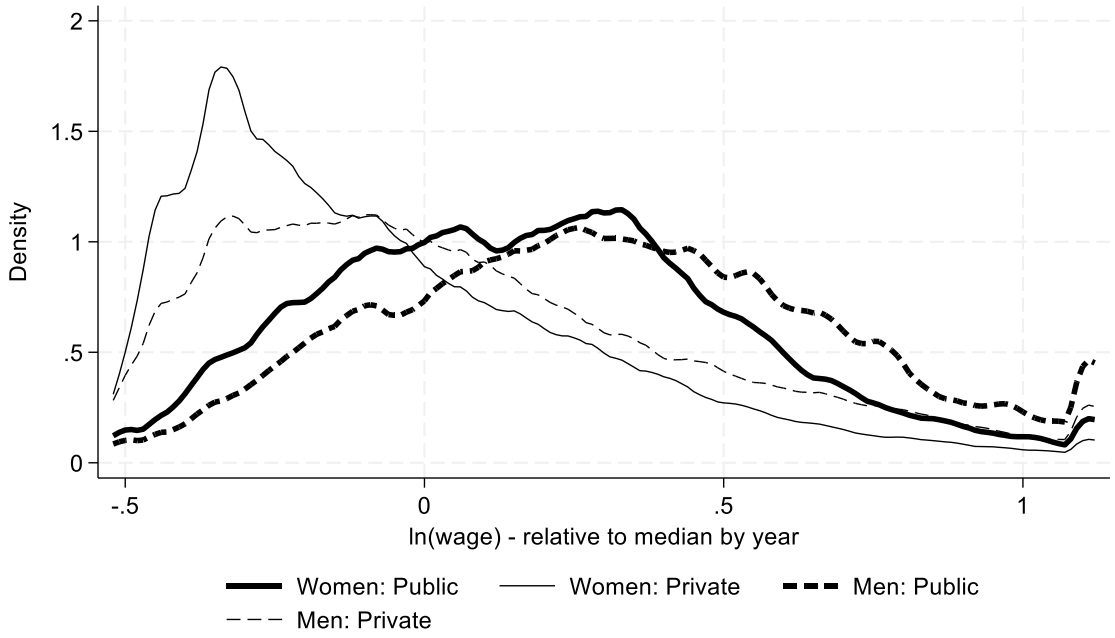
Source: HLFS-IS 2009-2024. For all public and private sector workers.

Figure 4: Public and private sector pay distributions (IS)

(a) All workers



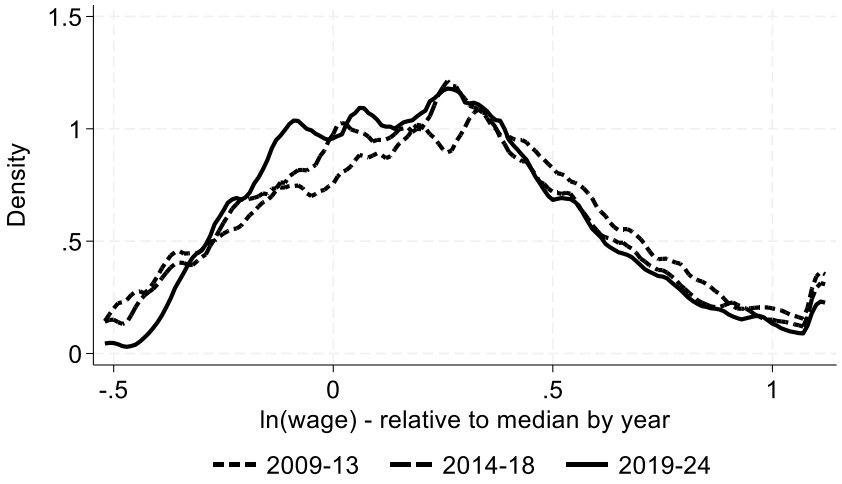
(b) By gender



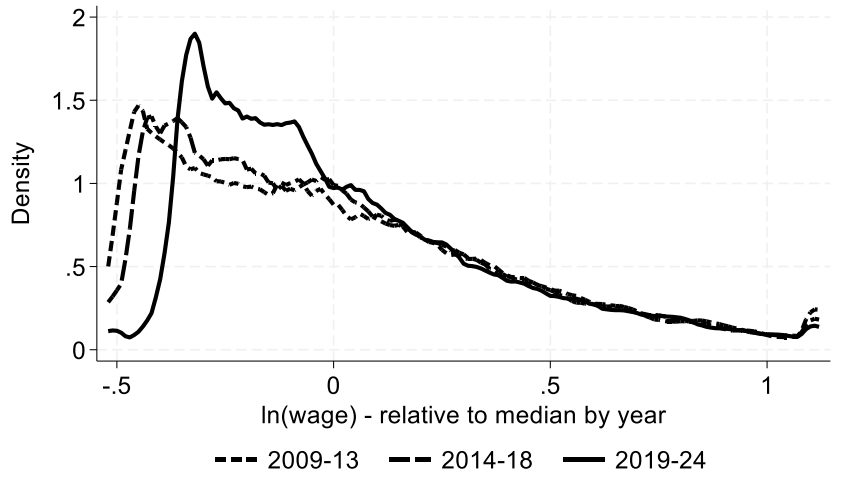
Source: HLFS-IS 2009-2024. For all public and private sector workers.

Figure 5: Changes over time in densities of public and private sector pay (IS)

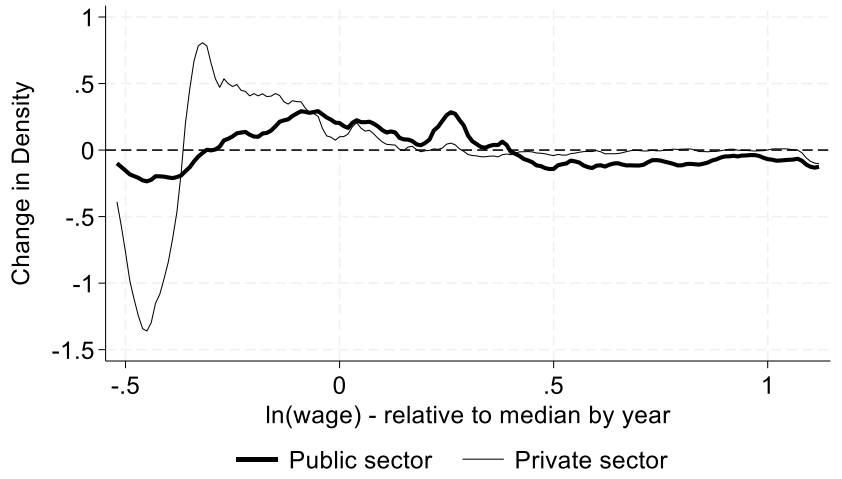
(a) Public sector



(b) Private sector

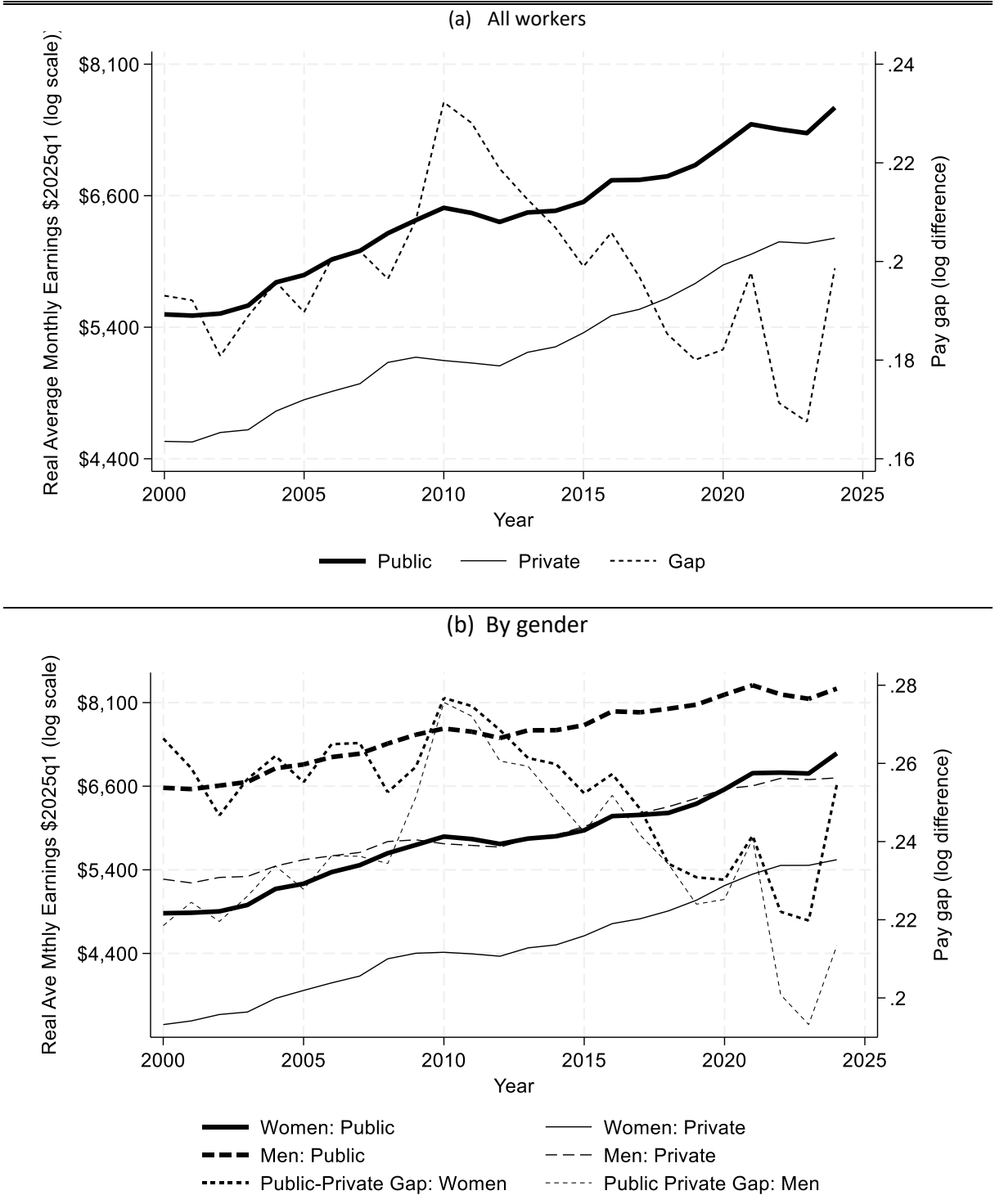


(c) Density Changes over time (between 2009-13 and 2019-24)



Source: HLFS-IS 2009-2024. For all public and private sector workers.

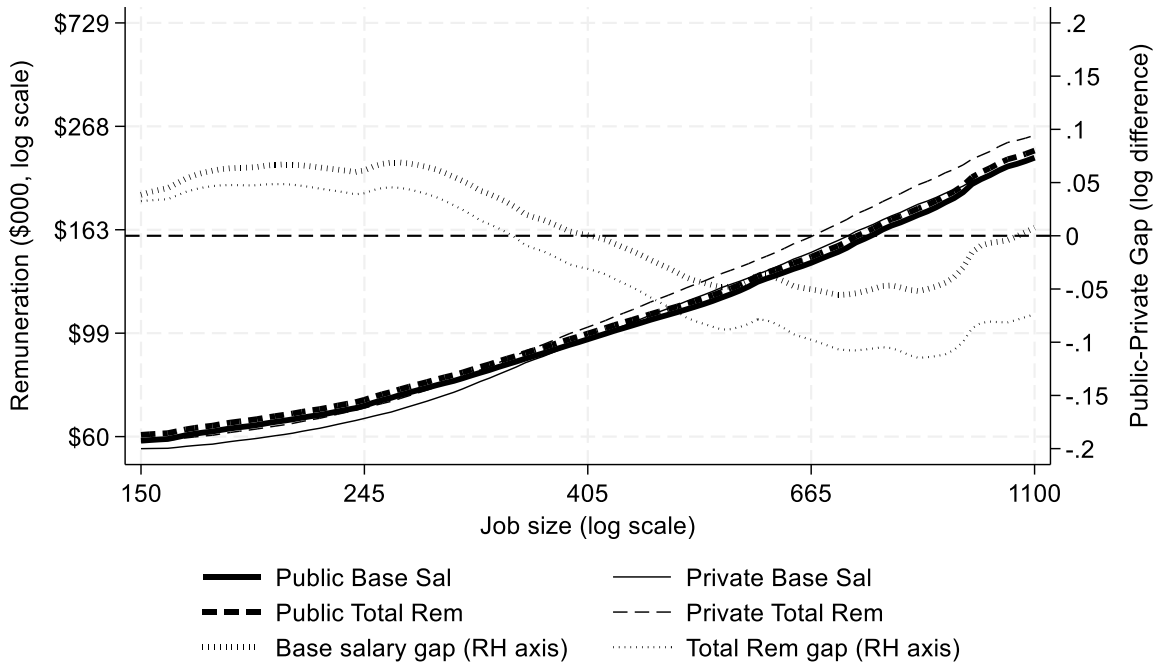
Figure 6: Public-private pay gaps (LEED)



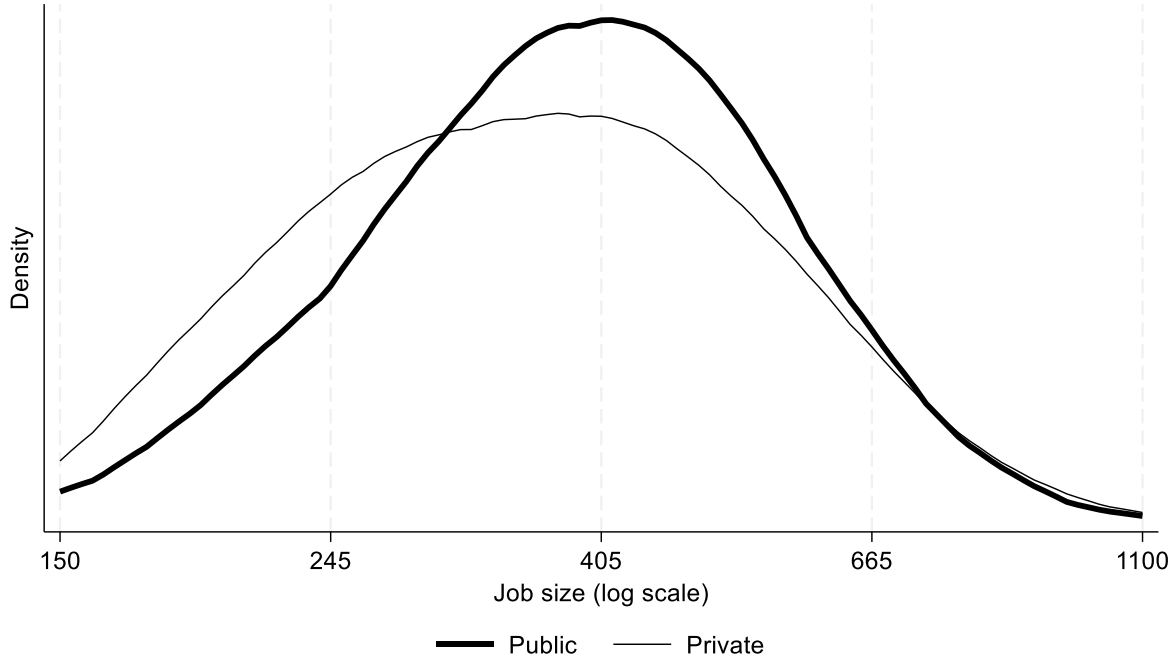
Source: LEED. Average monthly earnings are geometric means, weighted by FTE.

Figure 7: Public-private differences in job size and remuneration (SPL data)

(a) Remuneration and gap, by job size and sector



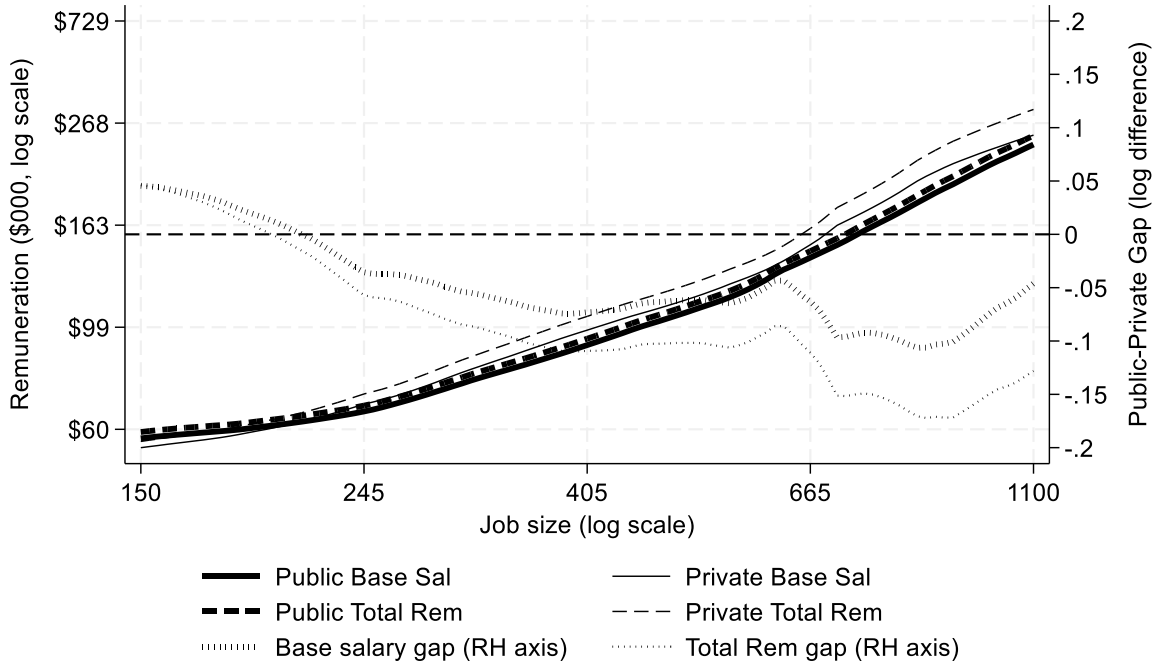
(b) Density of jobs size, by sector



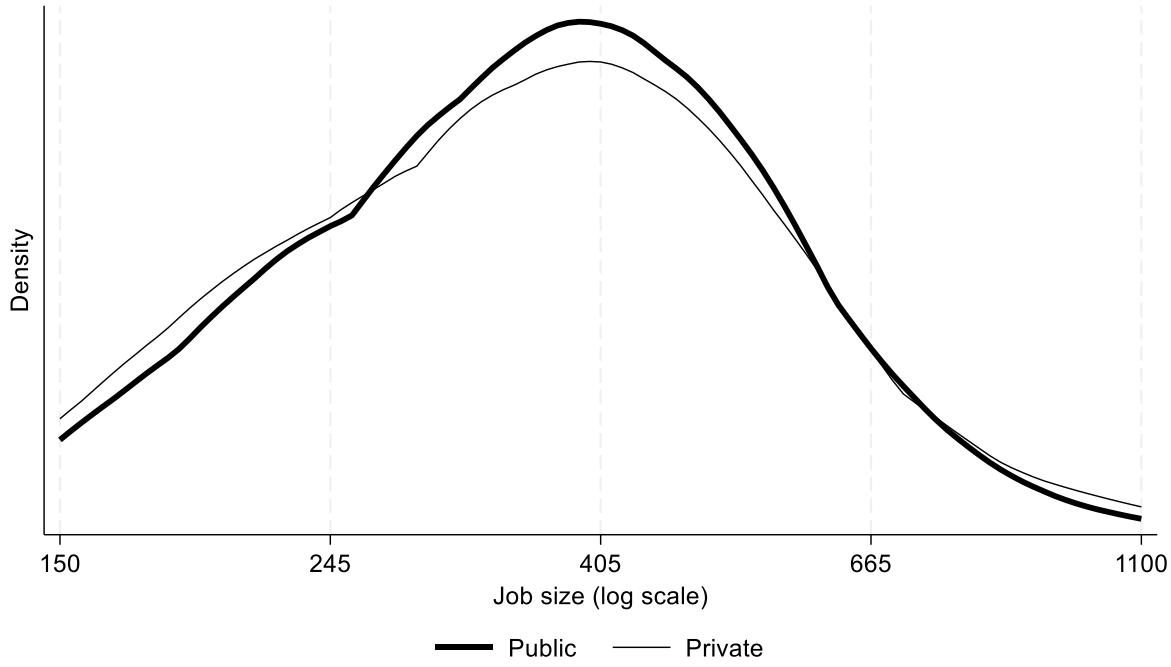
Source: Strategic Pay Ltd (June 2025).

Figure 8: Public-private differences in job size and remuneration (SPL SP10® evaluations)

(a) Remuneration and gap, by job size and sector

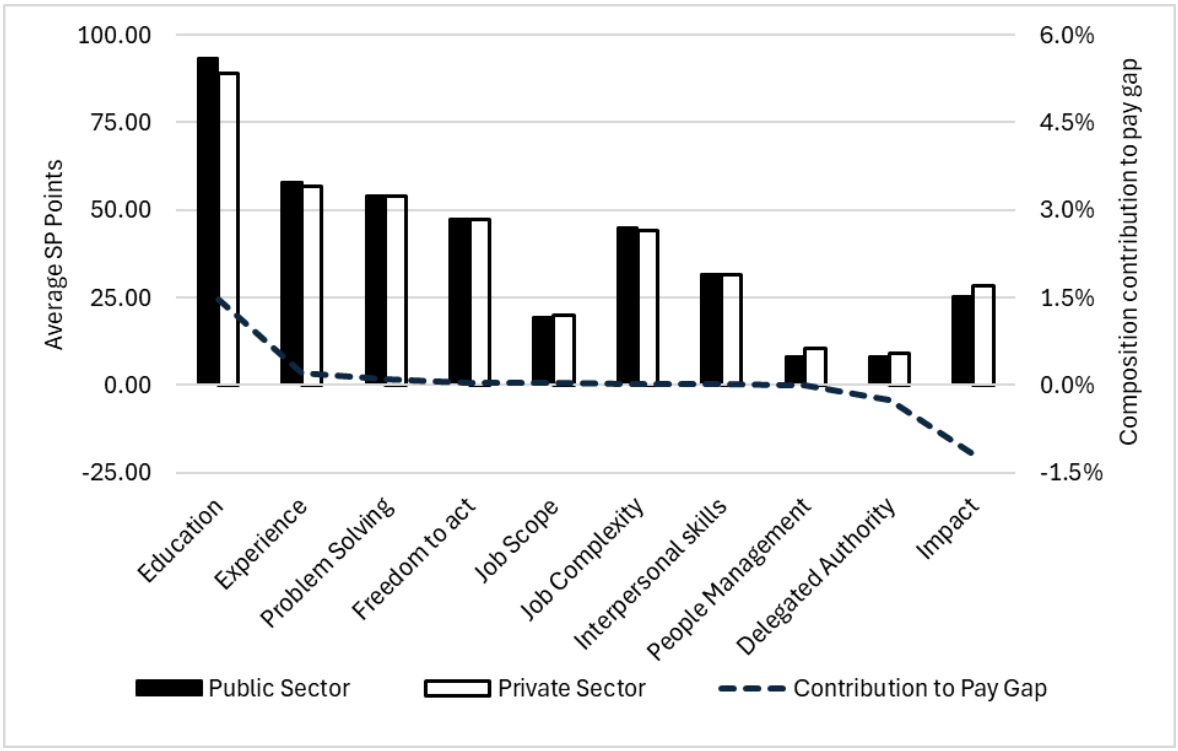


(b) Density of jobs size, by sector



Source: Strategic Pay Ltd (June 2025).

Figure 9: Composition of job size differences (by SP10® factors)



Source: Strategic Pay Ltd (June 2025).
Notes: Factors are ordered by points difference. Pay gap contributions are contributions to the base-salary pay gap, calculated as the composition effect in a Blinder-Oaxaca decomposition.

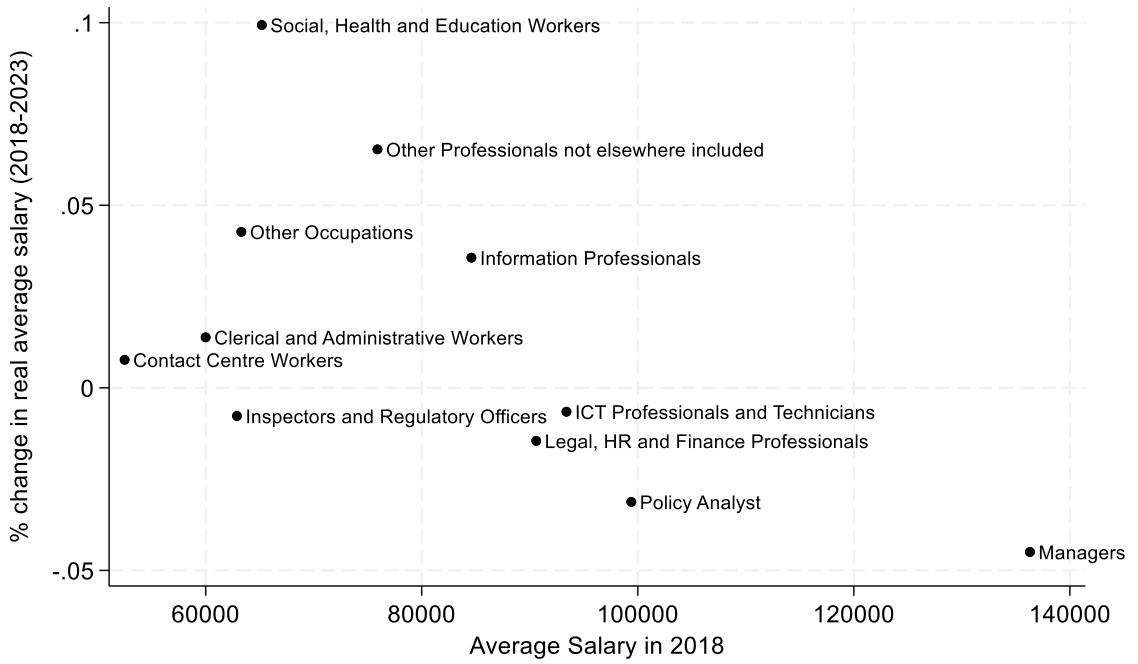
Appendix

Appendix Table 1: Identifying public and private sector from Institutional Sector and Business Type

		Business Type (Code)					
		Private	Central Govt		Local Govt		Other
		Enter-prise	Trading	Non-trading	Trading	Non-trading	
Institutional Sector		(1-6)	(7)	(8)	(9)	(10)	(11-20)
1: Producer Enterprises							
1111	Private Corporate Producer Ents	PRIV					PRIV
1121	Private Non-corp Producer Ents	PRIV					PRIV
1211	Producer Boards						PRIV
1311	**CG Enterprises**		C_OTH				
1321	**LG Enterprises**				L_OTH		
2: Financial Intermediaries							
2111	**Central Bank**		C_OTH				
2211	Private Registered Banks	PRIV					PRIV
2212	**CG Registered Banks**		C_OTH				
2213	**LG Registered Banks**				L_OTH		
2221	Private (M3) Depository Orgs	PRIV					PRIV
2222	**CG (M3) Depository Orgs**		C_OTH				
2223	**LG (M3) Depository Orgs**				L_OTH		
2291	Private Other Depository Orgs nec	PRIV					PRIV
2292	**CG Other Depository Orgs nec**		C_OTH				
2293	**LG Other Depository Orgs nec**				L_OTH		
2311	Private Other Fin Orgs (not 2411)	PRIV					PRIV
2312	**CG Other Fin Orgs except 2412**		C_OTH				
2313	**LG Other Fin Orgs except 2413**				L_OTH		
2411	Private Insurance & Pension funds	PRIV					PRIV
2412	**CG Insurance & Pension funds**		C_OTH				
2413	**LG Insurance & Pension funds**				L_OTH		
3. General Government							
3111	**CG (except 3121)**			C_NT			
3121	**Funded Social Security Schemes**		C_OTH				
3211	**Regional Authorities**					L_NT	
3291	**Other Local Authorities**					L_NT	
3311	**Rūnanga Iwi**				L_OTH		
4111	Priv Non-prof Orgs Servg H'holds						PRIV
5111	Households						RoW_HH
6111	Rest of World						RoW_HH

Notes: Bold & Underlined sector codes identify QES "Public Sector". "Private Enterprise" includes 1 (individual proprietorship), 2 (Partnership), 3 (Registered limited liability company - excluding cooperatives), 4 (Co-operative companies), 5 (Joint ventures and consortia) and 6 (Branches of companies incorporated overseas). "Other" includes 11 (Incorporated and unincorporated societies and associations), 12 (Charitable trusts), 13 (Trusts/Estates), 14 (Consulates and foreign embassies) and 20 (Other business types)

Appendix Figure 1: Real average salary increases (Public sector occupations 2018-2023)



Source: Public Service Commission, Workforce Data https://www.publicservice.govt.nz/research-and-data/workforce-data-2023/workforce-data-2023-remunerationpay/workforce-data-2023-wage-trends (accessed 6 August 2025)