Cardiff University Press
Gwasg Prifysgol Caerdydd

Welsh Economic Review

What explains Wales' higher sickness absence rate compared to other regions?

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DOI: https://doi.org/10.18573/wer.276 Accepted: 14/10/2025

Abstract

Using data from the 2023 Annual Population Survey this paper explores explanations for the higher rate of sickness absence in Wales compared to the UK average. The paper isolates the role of differences in workforce composition from unobserved drivers of regional differences in sickness absence. While unexplained regional gaps in sickness absence exist between Wales and some other UK regions, particularly London and the South East, these are by no means universal. In most cases, after accounting for differences in the characteristics of jobs known to influence absence, sickness absence rates in Wales are similar to other UK regions.

JEL classification: J22, R12

Keywords: Wales, sickness, absence, economic inactivity, productivity

Introduction

National statistics for 2022 reported by the ONS (2023) highlight that Wales had the highest average sickness absence rate, measured in terms of hours lost, among the 12 UK Government Office Regions.[1] Sickness absence is a critical indicator for both productivity and worker well-being. From a productivity perspective, employee absences represent lost labour input and disrupted workflows (Brouwer et al., 2002; Grinza and Rycx, 2020; Herrmann and Rockoff, 2012). From a well-being perspective, sickness absence reflects underlying health conditions, the incidence of which can also be shaped by poor working environments and low job satisfaction (Marsden and Moriconi, 2011). Sickness absence is also linked to job loss and inflows into economic inactivity and is therefore important in relation to the government's 80% employment target (Department for Work and Pensions and Department for Business and Trade, 2025).

Sickness absence rates are shaped by a complex combination of individual, work-related, and contextual factors, including regional labour market conditions, cultural norms, and the institutional and policy environments. Lower levels of wages, education, and occupational class are consistently found to be associated with higher absence rates, partly due to poorer health and more demanding or hazardous working conditions (Barmby et al., 2004; Ercolani 2006; Sumanen et al., 2015; Vuorio et al., 2019). Health status, especially the presence of chronic conditions and poor mental health, is also a strong predictor of absence, often mediating the role of job demands (Ercolani, 2006; Vahtera et al., 1999; Vuorio et al., 2019). Demographic factors such as age, gender and family responsibilities are further found to be associated with absence, with higher absence rates typically found for women and older workers (Barmby et al., 2002; Gimeno et al., 2004; Sumanen et al., 2015; Vuorio et al., 2019).

In terms of regional differences Wynn and Low (2008) show that local authorities in the UK with higher levels of social deprivation exhibit higher sickness absence rates. Deprivation–measured across domains such as income, employment, crime, health, education, skills, and training–explained 17% of the variation across regions. Ercolani (2006) also documents regional variation in sickness absence across UK regions and suggests it is driven by differences in workforce characteristics and industrial composition. Barmby et al. (2002) examine international differences in sickness absence and identify key drivers of variation in absence across countries to include the generosity of sick pay systems, family friendly policies, working hours, job characteristics, and demographic structures. The international literature similarly highlights the role of contextual factors and conditions. For example, in a study of Finnish municipalities, Virtanen et al. (2005) find that weaker local economic conditions, reflected in higher unemployment and lower municipal revenue, are associated with higher rates of long-term absences. They suggest this may result from the cumulative health effects of unemployment, material hardship, and reduced access to healthcare. However, the study also finds that higher unemployment is associated with lower rates of short-term absence, which may reflect job insecurity and presenteeism as employees could be less willing to take uncertified leave in slack labour markets. Finally, Haugen et al. (2008) examine regional variation in sickness absence in Sweden and find a substantial role for 'absence cultures', where local attitudes and norms around the legitimacy of taking sick leave shape regional outcomes. Taken together, these studies highlight how local economic conditions and social norms can influence regional differences in sickness absence in addition to differences in workforce composition.

Considering this literature, Wales presents a particularly relevant context in which to examine the drivers of sickness absence. The region consistently ranks among the lowest in the UK in terms of productivity (Henley, 2024; Jones, 2025), has historically high levels of economic inactivity, particularly linked to long-term illness (Gomes and Poole, 2023; Jones et al., 2004), and features a workforce concentrated in lower-paid, more physically demanding occupations and industries (Blackaby et al., 2018; Jones, 2025). These characteristics mirror many of the factors identified in the wider literature as being associated with higher sickness absence rates. Building on these insights, this paper investigates the extent to which Wales' higher absence rate compared to other UK regions reflects differences in workforce composition, such as occupation, industry, and job quality, or whether it reflects an unexplained regional effect, potentially capturing cultural or other economic factors. Further, by situating Wales within a UK-wide comparative framework, the analysis also provides new evidence on the drivers of regional differences in absence in the UK.

The remainder of the article is structured as follows. Section 2 introduces the Annual Population Survey data and measures used for this analysis. Section 3 provides a descriptive overview of sickness absence across UK regions. Section 4 explores more formally the reasons for the higher absence rate in Wales. Section 5 briefly concludes.

Data and definitions

Data was obtained from the Annual Population Survey (APS), January-December 2023 (ONS, 2024). The APS combines data from the Labour Force Survey (LFS) with local area boosts to produce large and robust datasets suitable for regional analysis. It covers individuals aged 16 and over, living in private households across the UK, and is conducted

on a continuous basis throughout the year, providing comprehensive annual estimates of a range of labour market and socio-economic indicators. The sample size of approximately 150,000 individuals ensures robust regional estimates, making the APS particularly well-suited for comparing outcomes across the 12 UK regions.

A key advantage of the APS is its comprehensive set of work-related characteristics, which capture not only employment status, industry, and occupation, but also information on sickness absence. Specifically, respondents are asked whether they did any paid work in their main job during a reference week (typically the last full week before the interview date), or whether they were away from paid work. Respondents who did paid work are asked about their usual and actual working hours, and if not the same, the reason for the mismatch.

Following the approach in Barmby et al. (2002), sickness absence is defined here as the difference between contracted and actual hours due to sickness. Regional sickness absence rates are therefore calculated as the ratio of hours reported absent due to sickness to contracted hours, as follows.

$$R = \frac{\sum_{i=1}^{n} A_i}{\sum_{i=1}^{n} C_i} \quad (1)$$

Where R is the regional sickness absence rate. A_i reflects hours absent due to sickness of individual i, it is defined as $A_i = (C_i^u - C_i^a)s_i$, where C_i^u and C_i^a are usual and actual hours of work, respectively, and s_i is a binary indicator for whether the reason for mismatch between C_i^u and C_i^a is sickness. Accordingly, C_i is a measure of contracted hours, given as $C_i = C_i^a(1 - s_i) + C_i^u s_i$ such that contracted hours correspond to actual hours of work for those who have not indicated sickness, and usual hours for those who have. This hours-weighted measure reflects the overall burden of sickness absence on the regional workforce and is aligned with the measure used by the ONS (2023).

The sample is restricted to employees of working-age (between 16–64) who provided valid (personal or proxy) responses to the hours worked and sickness absence questions. To ensure results are representative of the working-age population in Wales and other UK regions, all analyses apply the person-level weights provided in the APS.

Regional differences in sickness absence rates

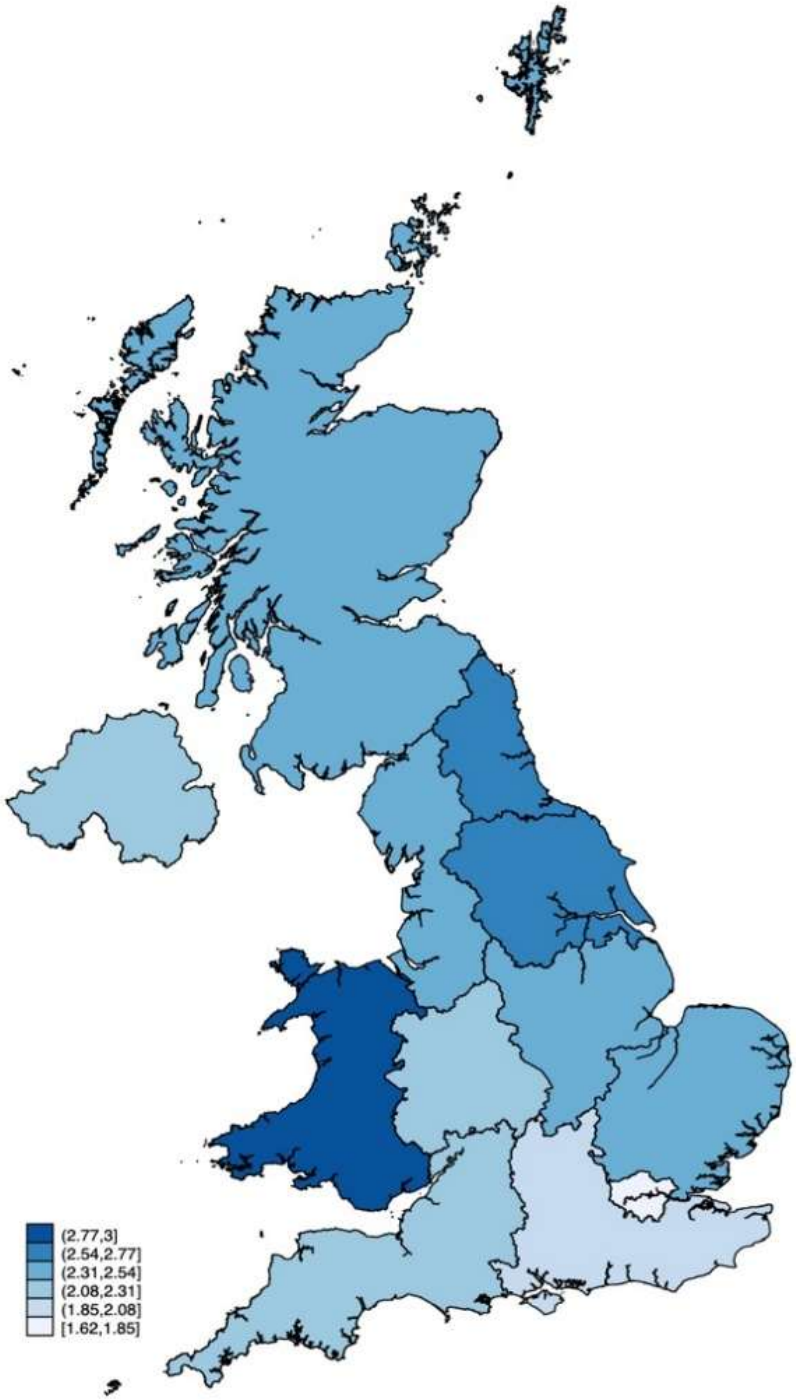


Figure 1: Sickness absence rates across UK regions

Source: Authors' calculations based on APS 2023.

Notes: Average sickness absence rate derived from the ratio of hours lost to sickness to contracted hours of work, calculated as in equation 1. Regional boundaries correspond to the 12 UK regions. Statistics based on a sample of 40,598 employees across the UK.

Figure 1 illustrates the regional variation in sickness absence rates across UK regions of residence in 2023. Wales stands out with the highest average absence rate (3.22%), followed by several northern English regions. In contrast, London and the South East exhibit the lowest sickness absence rates at 1.63% and 2.08% respectively, highlighting a marked North-South divide. This pattern is consistent with previous descriptive evidence of regional variation in sickness absence in Ercolani (2006). It also resonates with the North-South differences in ill-health and socioeconomic conditions highlighted in O'Leary et al. (2005), both evidenced to impact sickness absence rates in the international literature (Virtanen et al., 2005; Wynn and Low 2008).

Table 1 provides summary statistics for a selection of key personal, health, and work-related characteristics for Wales, London and the South East, and the rest of the UK. While there are no substantial regional differences in employee personal characteristics (Barmby et al., 2002; Gimeno et al., 2004; Sumanen et al., 2015; Vuorio et al., 2019), several important differences in health and work characteristics emerge. For example, the prevalence of disability is notably higher in Wales (20%) compared to London and the South East (16%) and the rest of the UK (18%).

Given the importance of health conditions in the literature (Ercolani, 2006; Vahtera et al., 1999; Vuorio et al., 2019), higher rates of long-term limiting health conditions reflected by disability may be a contributor to the higher sickness absence rates in Wales. Workers in Wales are also more likely to hold jobs in lower-paid and low-skilled occupations such as caring, leisure, and elementary roles, which have also been associated with higher sickness absence rates primarily due to the strenuous and hazardous nature of these occupations (Ercolani, 2006; Sumanen et al., 2015; Virtanen et al., 2005; Vuorio et al., 2019). Conversely, professional occupations are more prevalent in London and the South East (31% compared to 24% in Wales). Other work-related characteristics further underscore these differences. Average usual hours of work are slightly lower in Wales (34.10 hours) than in London and the South East (35.61 hours), while public sector employment is significantly more prevalent in Wales (36%) than in London and the South East (24%) and the rest of the UK (28%). UK evidence highlights that sickness absence rates tend to rise with hours worked up to around 30 weekly hours, before declining at higher hours (Barmby et al., 2004; Ercolani, 2006). This pattern has been linked to both health-related strain from long hours (D'Souza et al., 2006) and to workers' response to rigid contractual arrangements (Barmby et al., 2004; Ercolani, 2006). Meanwhile, public sector workers have been consistently shown to, on average, take more sickness absence. This pattern has been linked to more generous sick pay provisions and stronger job protection in the public relative to the private sector (Barmby et al., 2004; D'Souza et al., 2006; Ercolani, 2006).

The descriptive statistics suggest that higher sickness absence rates in Wales may be associated with a greater prevalence of disability and a workforce more concentrated in lower-paid and physically demanding occupations. This aligns with previous findings that link sickness absence to job quality, and regional variation to compositional effects (Barmby et al., 2003; Ercolani, 2006; Sumanen et al., 2015; Virtanen et al., 2005; Vuorio et al., 2019). While these descriptive comparisons provide initial insight into the potential drivers of regional differences in sickness absence, they do not account for the joint influence of these factors or for other confounding effects. The next section therefore employs multivariate regression analysis to examine the extent to which these compositional effects explain the observed disparities, particularly the higher rates in Wales.

Table 1: Personal, health and work-related characteristics by region

	Wales	London and South East	Rest of UK
Personal characteristics			
Age (in years)	41.56	41.58	42.24
Female	0.49	0.47	0.48
Married	0.65	0.65	0.68
Health characteristics			
Disability	0.20	0.15	0.18
Work-related characteristics			
Usual hours (in hours)	34.10	35.61	34.67
Tenure	8.15	6.85	8.01
Public sector	0.36	0.24	0.28
Permanent contract	0.96	0.96	0.96
Occupation			
Managers, directors and senior Officials	0.10	0.15	0.10
Professional	0.24	0.31	0.27
Associate professional	0.15	0.16	0.14
Administrative and secretarial	0.12	0.11	0.12
Skilled trades	0.07	0.05	0.07
Caring, leisure and other service	0.10	0.07	0.08
Sales and customer service	0.07	0.05	0.06
Process, plant and machine operatives	0.07	0.03	0.06
Elementary	0.09	0.06	0.08

Source: Authors' calculations based on APS 2023.

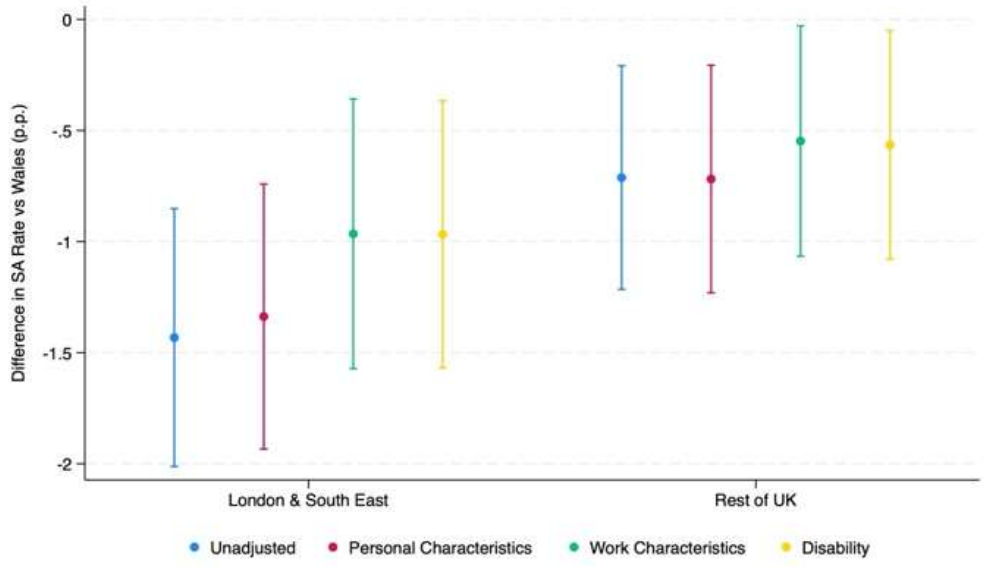
Notes: Weighted proportions (unless otherwise stated) of a subset of the covariates included in the regression analysis in Figures 2 and 3. Proportions reflect the share of the sample (e.g., 0.49= 49%). Rest of UK aggregates all UK regions, excluding Wales and London and South East. Samples sizes are 3,971 employee observations in Wales, 7,714 for London and South East, and 28,913 for rest of the UK. Disability defined according to the legal definition under the Equality Act (2010). Occupational categories based on major groups of the Standard Occupational Classification 2020.

Can we explain the higher sickness absence rate in Wales?

Figure 2 presents the results of a stepwise regression analysis investigating the factors driving differences in sickness absence rates between Wales, London and the South East, and the rest of the UK. In these models, the dependent variable is the individual sickness absence rate (defined above), and explanatory variables are added progressively in blocks that include personal characteristics, work-related characteristics, and disability status.[2] This regression analysis approach follows previous studies of sickness absence in the UK and internationally (Barmby et al., 2002; Barmby et al., 2004; Ercolani, 2006). The

regressions also include indicators for aggregated regional categories corresponding to residence in London and the South East or the rest of the UK, with Wales serving as the reference region. This grouping is motivated by both Figure 1 and Table 1, which show that London and the South East have notably lower sickness absence rates and distinct workforce characteristics. The plots capture the difference in sickness absence rates between Wales and each corresponding region from successively more comprehensive models. In each case both the coefficient estimate (dot) and the 95% confidence interval (vertical lines) are presented. The latter indicates whether the gap relative to Wales is significantly different from zero.

Figure 2: Differences in sickness absence rates between Wales and the rest of the UK



Source: Authors' calculations based on APS 2023.

Notes: Month fixed effects included in all specifications. Personal characteristics include gender, marital status, ethnicity, and education. Work characteristics include usual hours, tenure (years), occupation (SOC2020 major groups), industry (SIC2007 sections), sector, contract type, homeworking, and firm size. Rest of UK aggregates all UK regions, excluding Wales and London and the South East. Samples sizes in the unadjusted specification are of 3,971 employee observations for Wales, 7,714 for London and South East, and 28,913 for rest of the UK.

The unadjusted differences in sickness absence rates (blue markers) confirm that employees in London and the South East have sickness absence rates that are roughly 1.5 percentage points (46.6%) lower than those in Wales. While regions in the rest of the UK also have lower absence rates relative to Wales, the gap is smaller, at about 0.7 percentage points (21.7%). Adjusting for personal characteristics (red markers) slightly narrows the gap between Wales and London and the South East but leaves the gap between Wales and the rest of the UK essentially unchanged. In contrast, adjusting for work characteristics (green markers) significantly narrows gaps between Wales and both aggregate regions. The

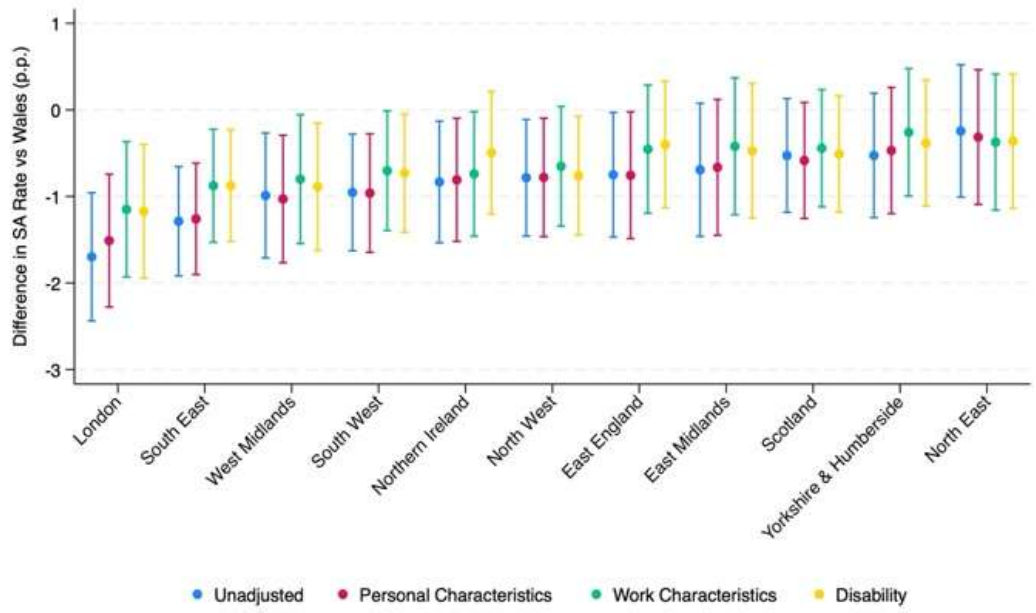
pronounced influence of work characteristics reflects these characteristics as important drivers of sickness absence, and the pronounced regional differences in these characteristics in Table 1. Finally, despite the higher proportion of disabled employees in Wales, controlling for disability status does not narrow regional disparities, suggesting it is not a major driver of the regional differences in absence observed.

Within work characteristics, occupation, industry, and firm size are the characteristics that contribute most to narrowing the sickness absence rate gaps with Wales.[3] Specifically, the concentration of workers in low-skilled occupations in Wales is likely associated with jobs that have higher exposures to adverse working conditions, including hazardous environments and jobs that require greater physical strain (Ercolani, 2006; Sumanen et al., 2015). In addition to these tangible job features, the literature also highlights the significance of psychosocial work factors**.** The greater concentration of employment in sectors such as elementary occupations, caring services, and manufacturing in Wales may be associated with jobs with lower security, high psychological demands, low job control and autonomy, all which have been highlighted as drivers of higher sickness absence (D'Souza et al., 2006; Gimeno et al., 2004). Public sector employment contributes to narrowing regional differences, albeit more modestly. This is aligned with the literature (D'Souza et al., 2006; Ercolani, 2006), and may reflect public sector jobs generally offering more generous sick pay entitlements and greater job security, thereby reducing the financial deterrent to taking sick leave compared to the private sector.

Overall, Figure 2 highlights that, while there are substantial unadjusted differences in sickness absence rates between Wales and London and the South East and Wales and the rest of the UK, a large share of these gaps are accounted for by regional differences in worker composition. Nevertheless, approximately a third of the unadjusted gap in absence between Wales and London and the South East, and a fifth of the gap between Wales and the rest of the UK remains after controlling for all characteristics. This residual difference may reflect unmeasured compositional factors, such as health status not captured by disability, or differences in the nature or practices among employers not accounted for by the work characteristics. The difference may, however, also reflect broader regional effects that influence absence, such as cultural norms (Haugen et al., 2008), or local economic conditions (Virtanen et al., 2005; Virtanen et al., 2010; Wynn and Low, 2008). Although these mechanisms are plausible, their contribution to the residual differences is not established empirically here.

These patterns are explored further in Figure 3 which presents corresponding estimates to Figure 2 but disaggregates the analysis to consider gaps in sickness absence rates between Wales and each of the other 11 standard UK regions separately. The figure shows that, unadjusted, most regions exhibit lower sickness absence rates than Wales, although in several cases these differences are not statistically significant. Indeed, absence rates in East Midlands, Scotland, Yorkshire and Humberside and the North East are similar to Wales.

Figure 3: Differences in sickness absence rates between Wales and other UK Regions



Source: Authors' calculations based on APS 2023.

Notes: Month fixed effects included in all specifications. Personal characteristics include gender, marital status, ethnicity, and education; Work characteristics include usual hours, tenure (years), occupation (SOC2020 major groups), industry (SIC2007 sections), sector, contract type, homeworking, and firm size

Other regions, such as Northern Ireland, the North West, and East England, exhibit significant and lower unadjusted gaps with Wales, but these are accounted for differences in composition between Wales and these regions. In contrast, London and the South East have consistently lower sickness absence rates than Wales, and these persist even after accounting for personal and work characteristics and disability status. This persistent difference suggests that, even after accounting for observed characteristics such as age, occupation, and disability status, sickness absence rates remain systematically lower in London and the South East than in Wales, possibly reflecting unmeasured compositional differences or broader regional effects. The more disaggregated regional analysis suggests that comparisons between Wales and the UK average can be misleading and reinforce the need for region-specific comparisons. Moreover, the role of workforce composition varies notably across regions. In some areas, such as Northern Ireland and East England, a large share of the unadjusted absence gap with Wales is explained by differences in workforce composition. In contrast, for regions like Scotland and the North West, composition effects account for only a small proportion of the observed gap in absence.

Conclusions

Wales has the highest rate of sickness absence of all UK regions. Moreover, the gaps with some regions, particularly London and the South East are substantial, with sickness absence rates in those areas around 47% lower than in Wales. Furthermore, gaps between Wales and London and South East, or Wales and the rest of the UK, are only partially explained by workforce composition in terms of employee personal and work-related characteristics. This leaves an unexplained regional gap consistent with systematically higher rates in Wales. Further analysis by UK region, however, suggests that the higher sickness absence rates observed in Wales are not exceptional but instead align with a broader North-South gradient in sickness absence that is likely to reflect occupational structures and working conditions. In this respect, the analysis once again highlights the limitations of relying on UK-wide averages to make inferences in relating to the Welsh labour market.

The importance of workforce composition in explaining gaps in absence between Wales and London and the South East suggests an important role for work-related characteristics including in terms of occupation, industry, and firm size. Changes in the composition of employment in Wales could therefore help reduce sickness absence in Wales. These changes may be influenced by initiatives that promote the growth of skilled occupations and industries where sickness absence is less pronounced through targeted investment and tailored skills programmes. Equally, initiatives that promote improvements in working conditions and worker health in high-absence occupations and industries exposed to hazardous and strenuous conditions could also help reduce Wales' sickness absence rate.

Such initiatives align with current policy developments in the UK designed to increase employment. Under the UK Government's *Economic Inactivity Trailblazer Programme, local areas are backed with investment to reduce economic inactivity.* This includes a £10 million Welsh pilot scheme in Denbighshire, Blaenau Gwent, and Neath Port Talbot that combines tailored employment support and mentoring, health and wellbeing services, and skills development (Department for Work and Pensions 2025). In parallel, the Welsh Government's *Young Person's Guarantee* provides under-25s with tailored support to pursue work, education, training, or self-employment (Welsh Government 2023). The emphasis of the *Keep Britain Working* review on employers' and government collaboration to promote inclusive and health-supportive workplaces (Department for Work and Pensions and Department for Business and Trade 2025) provides a framework for scaling effective practices identified in these pilots and programmes to all local areas in Wales. However, the results in this paper suggest that such pilots should not only focus on (re)entry into work but also on job quality and high-skill occupational and industrial composition to reduce sickness absence and enhance employment retention in Wales.

Endnotes

1. The ONS (2023) measures the sickness absence rate as the ratio of the sum of total hours lost to sickness to the sum of actual hours for those with no sickness absence and sum of usual hours for those with sickness absence.

2. While the literature evidences a role of income and pay on sickness absence, it is not possible to include pay in the specifications since a substantial number of observations reporting sickness absence have missing information on pay. This is possibly linked to long-term sickness or sickness throughout the entire reference week on which pay information is based.

3. The full regression results are available upon request.

Acknowledgments

The analysis if part of the work of The Productivity Institute which is funded by the Economic and Social Research Council (grant number ES/V002740/1). Material from the Annual Population Survey is Crown Copyright, has been made available from the Office for National Statistics (ONS) through the UK Data Archive and has been used by permission subject to the UK Data Service End User Licence Agreement.

We are grateful to members of the Wales Productivity Forum and an anonymous referee for comments on an earlier version of this analysis.

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