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Are Earnings Higher in the Public Sector?

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SUMMARY

There has been much media focus in Ireland on what workers earn in the 'public sector' and the 'private sector'. Earnings of employees are higher in the public sector than in the private sector. The reason is to do with the nature and composition of the workforce in each sector and because the *gender* pay gap for women is lower in the public sector than in the private sector. When account is taken of differences the gap in earnings is much less than appears to be the case at first glance. Various technical methods are used to estimate the gap in earnings. There is no universal agreement on how to measure the difference or what the extent of the gap is in Ireland. Recently, the Central Statistics Office published an analysis which showed a range of estimates from close to no gap in the case of some estimates for men to a maximum of around 21% of a gap in the case of women workers when other estimates are used. This Brief explores the evidence as contained in the CSO analysis.

KEY POINTS

- estimates for the 2010 public sector pay gap for men range from 2.3% to 16.0%

- estimates for the 2010 public sector pay gap for women range from 9.2% to 21.5%

- the estimated pay gap in 2010 is lower than in previous years

- The gender pay gap for women is lower in the public sector

- The analysis excludes benefit in kind, irregular bonuses and commissions, employer's PRSI, employer's pension contributions, redundancy payments or back pay

- The public service pension levy is not accounted for, nor is the value of having a public sector pension

- The analysis does not compare similar jobs between the public and private sectors

- There is no consensus on the appropriate method to estimate the pay gap, so the CSO present a range of results

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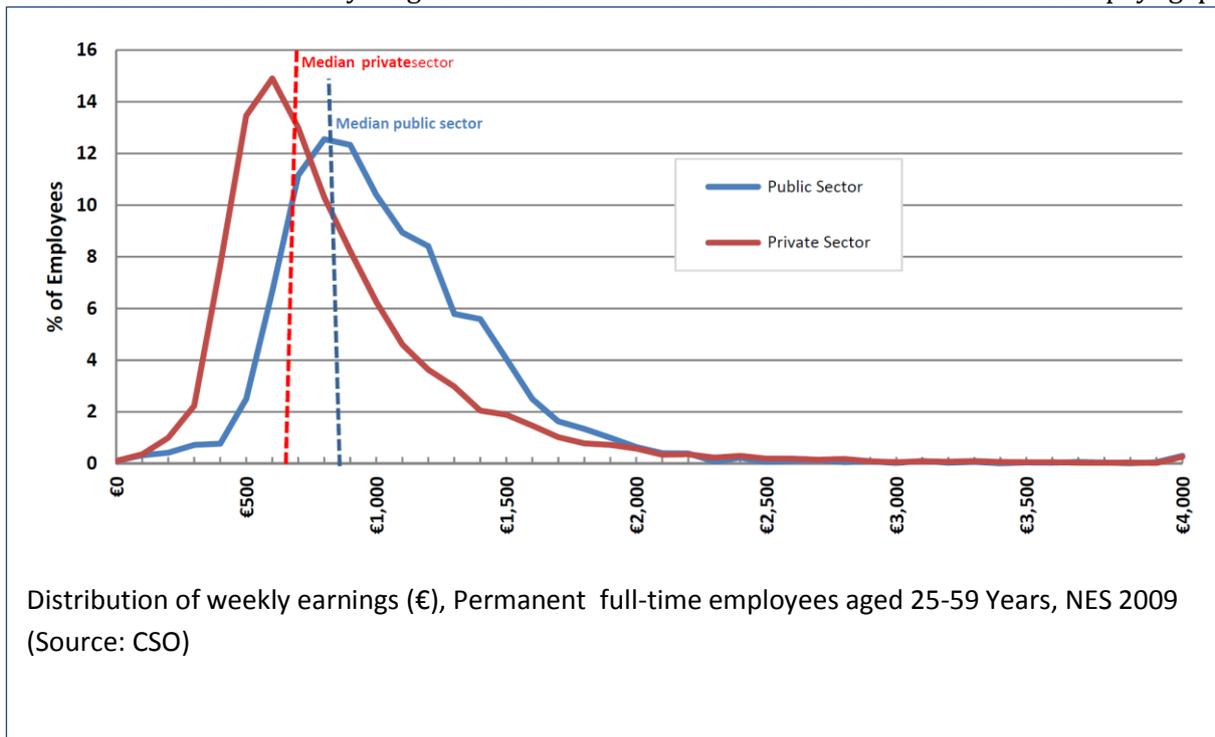*Research for new economic policies*

Overview

The paper "National Employment Survey 2009 and 2010: Supplementary Analysis" looks at the public-private pay gap. The data source is the CSO's National Employment Survey. The CSO are clear about the limitations of such an analysis. It states that the "analysis does not compare similar jobs between the public and private sectors". Rather, the analysis is able to compare workers according to some measures such as age, union membership, level of education, gender, and sector, etc. There may be other factors that affect wages. For example, a workers' 'soft skills' such as their ability to interact with others is not covered in the survey. Also, even when we know a workers level of education we would expect different wages to be paid to someone with a top mark in a computer science degree and someone who was at the bottom of their class. The CSO clearly state that, "There may be other factors which impact on earnings for which we have no measure". The analysis focuses on gross weekly earnings. Therefore the reduction in take home pay of public sector workers due to the public service pension levy[i] is not accounted for. Gross weekly wages includes "normal wages, salaries and overtime, taxable allowances, regular bonuses and commissions, holiday and sick pay" but excludes "benefit in kind, irregular bonuses and commissions, employer's PRSI, employer's pension contributions, redundancy payments or back pay". Workers in the private sector are possibly more likely to receive irregular bonuses and commissions (e.g. a Christmas bonus) and also an employer contribution to the pension fund, though public sector workers usually benefit from a pension which is not fully accounted for.

One other issue is the definition of the public sector. The headline results include earnings in the commercial semi-state sector as part of the wider public sector. The public sector includes the Civil Service, Defence Forces, Garda Síochána, local authorities, education (except private institutions), regional bodies, health (excluding private institutions) and semi-state bodies (except their subsidiary companies).

Results

When interpreting the results it must be remembered that the estimated pay gap

Distribution of weekly earnings (€), Permanent full-time employees aged 25-59 Years, NES 2009 (Source: CSO)

may be due to factors not recorded in the National Employment Survey, differences with what is recorded in weekly pay (e.g. bonuses), or a genuine pay premium.

The CSO have presented results using three main methodologies. There is no consensus as to how to measure wage differentials. There is a wide variation in the estimates given. This indicates that there are some important determinants of wages that are excluded from the survey. However, there are some findings that are consistent across all methods. All methods show an estimated wage gap for public sector workers. All methods show that women have a higher estimated wage gap than men (alternatively, one could say that the *gender* pay gap for women in the public sector is smaller than in the private sector). All methods show that the estimated wage gap was lower in 2010 than in 2007 or 2009. For all methods the estimated wage gap is smaller when we focus on full-time permanent workers (aged 25-59) than when we look at all employees. The estimated pay gap is (slightly) reduced if semi states are included with the private sector rather than the public sector. For all methods the estimated pay gap is statistically significant. In 2010 estimates for the male wage gap range from 2.3% to 16.0% and 9.2% to 21.5% for women (for women it can go as low as 7.7% if commercial semi-state companies are included with the private sector). Incomes are also more evenly distributed in the public sector, as can be seen in the above graph.

Conclusion

While there has been much discussion regarding the public sector pay gap there has been no agreement on either the size of a possible pay gap, or how to measure it. Even with the latest available statistical methods, there will be important factors omitted. This is due to the nature of the data that is available. To clearly establish the size of any pay gap would require a new survey specifically designed for this purpose, which would aim to match job characteristics in addition to the characteristics of workers.

References

Central Statistics Office (2012) National Employment Survey 2009 and 2010 - Supplementary Analysis. Dublin: Stationery Office.

Appendix
Methodologies

The techniques used by the CSO are in line with other studies[ii]. Three methodologies were used. These are "Ordinary Least Squares" (OLS) regression; Blinder-Oaxaca (B-O) Decomposition; and "Quantile-Regression". Both OLS and B-O aim to measure the average effect on wages, while Quantile Regression sheds light on how the effect is distributed. It must be noted that all methods of measurement require some assumptions.

OLS is the simplest method, and when its assumptions hold true, gives the average public sector wage gap. However one of its (many[iii]) assumptions is that other factors that determine wages (for example, gender) receive the same return in the public and private sector. This may not be the case. For example, the pay penalty for being a woman is lower in the public sector than the private sector. (This could be the case if the public sector has better policies to ensure women are not discriminated against.) If the returns to workers' characteristics are different in the public sector and private sector, then it is impossible to *identify* what is the cause of a pay gap.

The B-O method helps to overcome this. One sector (in this case the private sector[iv]) is chosen as a benchmark, and the average returns to various characteristics such as education and gender are calculated. It is then possible to decompose how much of the difference in pay is due to differences in characteristics (e.g. there are more educated people in the public sector) and how much is due to the differences in returns for those characteristics. However, the choice of benchmark group is a matter of judgement. For example, *if* we accept that the return to gender in the private sector is an appropriate benchmark, then if women are less discriminated against in the public sector this is recorded as part of a public sector pay gap. Hence, the statistical

estimate depends on the assumptions of the researcher. Overall the CSO results show no clear pattern as to whether the OLS or B-O methodology shows a higher wage gap.

There are some problems with the OLS and B-O methodologies, particularly where there are large elements of the private sector that do not overlap with the public sector. Suppose for example that the return to education was the same in the public sector and private sector, with the exception of for retail and hotel workers. Suppose the return to education for retail and hotel workers was particularly low. As retail and hotel workers only appear in the private sector; their low return to education drags down the estimate of the overall return to education in the private sector. Therefore the estimate of a public sector pay gap may be higher than if we excluded private sector workers who have no counterpart in the public sector.

Dispersion/Inequality

Earnings are more evenly distributed in the public sector than in the private sector, but it is not known if this is due to pay rates being more evenly distributed, or whether workers in the public sector are more similar to one another than in the private sector. The results from CSO quantile regression analysis shed no light as to whether lower income workers benefit more from being in the public sector than higher income workers[v]. Though probable, the analysis does not demonstrate whether being in the public sector is the cause of the relatively more equal distribution of pay in the public sector. Alternative methodologies could help to shed light on this issue.

Weighting and Firm size

There are issues as to whether sampling weights or firm size should be used. If an OLS or B-O model is correctly specified then using sampling weights should not have an impact on the results. The fact that it does affect the results shows that some important variable (such as worker ability or motivation) is missing or unobserved. Therefore the CSO's approach of presenting a range of results is appropriate. Firm size is also associated with higher wages, but through indirect ways (such as large firms

are generally more productive and more productive firms pay higher wages). Again, that firm size has a large impact on the estimated results shows that something important is missing from the analysis. Again the CSO took appropriate action by presenting a range of results.

[i] The 'emergency' budget of February 2009 introduced a new deduction, the pension levy, to the pay of public sector workers. This reduces take-home pay, but the CSO analysis covers gross pay. The pension levy is not considered to have affected gross pay.

[ii] Though the methods used are in common use, the latest nonparametric methods, which are commonly used in labour economics, and which make fewer assumptions on how the data is distributed, were not used. More information on nonparametric methods can be found in: Racine, Jeffrey S. (2008) "Nonparametric Econometrics: A Primer." *Foundations and Trends® in Econometrics*, 3(1), 1-88.

[iii] It also assumes that the unobserved determinants of wages, such as worker motivation, are unrelated to whether or not someone works in the public sector. However this 'endogeneity' problem exists for most methodologies.

[iv] Different results would be given if the public sector was chosen as the benchmark. The private sector was chosen as the benchmark to ensure consistency with previous research by the ESRI.

[v] This is as quantile regression gives the wage gap for different points along the income distribution *controlling for other factors*.